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ABSTRACT

The report evaluates the impact and effectiveness of the Triple "T" Consortium (Teaching Texas Tots) using data gathered from nine of the 14 projects, pre-post test scores of a sample of 126 handicapped children (under 2 years) from the project, case studies reports from selected families, reports of sample children, and a parent reaction questionnaire. The consortium projects generally combined home/center delivery service, with the average age of children served being 21 months, and the number of children served totaling 924 (including 118 in the 3-year and older group). Results of the post test scores of the sample children showed highly significant improvement (greater than could be expected from a growth or maturation effect). Data from individual case studies showed that even those who had made the least progress had improved in one or more developmental areas. Family case study reports evidenced many positive changes during the project. Results of the parent survey demonstrated strong positive reaction to the project. (PHR)

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TEACHING TEXAS TOTS CONSORTIUM EVALUATION STUDY

Macy Research Associates
Dallas, Texas

May, 1978

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Teaching Texas Tots

Advocates for the Education of Handicapped Infants

The Triple "T" Consortium is an organization of projects serving handicapped infants age birth through two years in Texas.

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The opinions expressed herein do not necessarily reflect the position or policy of the Texas Education Agency nor the U. S. Office of Education, and no official endorsement should be inferred.

An evaluation report prepared by Macy Research Associates, 7028 Irongate Lane, Dallas, Texas, 75214.

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Introduction

The Teaching Texas Tots (TTT) Consortium was formed in May, 1976 by educational projects serving handicapped children ages birth through two years in Texas. One impetus for this Triple "T" Consortium was more effective advocacy for handicapped infants, and a primary interest of the organization is the establishment of free appropriate educational programs for handicapped infants within Texas. The Consortium purposes are as follows:

1. To increase awareness of the importance of infant intervention programs for the handicapped.
2. To provide overview of current state of infant programs (i.e., models, research results, legislative trends).
3. To develop future directions for programs for handicapped infants.

In general Triple "T" projects provide a variety of special services to children with a wide range of handicapping conditions. Handicap areas may include speech and language, physical disabilities, hearing and visual impairment, mental retardation, emotional disturbance, developmental delay, special health problems, and other high risk conditions. Services provided may include comprehensive appraisal and assessment, development of an overall individualized educational program, physical and occupational therapy, nutritional and dental assistance, behavior change programs, counseling, medical service, and other services.

Projects typically give high priority to parent involvement, and many services are available to families of handi-

capped children. In many cases, parents are trained in more effective procedures for teaching their handicapped child, and parents also provide many noninstructional services and support to the projects.

Member projects in the Consortium are as follows:

Project Throutwo
West Texas Rehabilitation Center
Abilene, Texas

Project PIP (Parents in Partnership)
Garland Independent School District
Garland, Texas

Project FAITH (Family Assistance for Infants and Toddlers with Handicaps)
Longview Independent School District
Longview, Texas

The Travel Learning Center (TLC)
Silsbee Independent School District
Silsbee, Texas

Project Happy Child
Columbia-Brazoria Independent School District
West Columbia, Texas

Infant-Parent Training Program
Austin-Travis County Mental Health/Retardation Center
Austin, Texas

Project KIDS (Kindling Individual Development Systems)
Dallas Independent School District
Dallas, Texas

The Demonstration and Training Center for High Risk or Mentally Retarded Infants of Teenage Mothers
Mental Health/Mental Retardation Authority of Harris County
Houston Independent School District
Baylor College of Medicine
Houston, Texas

Developmental Education Birth through Two (DEBT Project)
Lubbock Independent School District
Lubbock, Texas

PEECH Outreach: A Program for Early Education of Children with Handicaps
Region IX Education Service Center
Wichita Falls, Texas

Special Education Program
San Felipe Del Rio Consolidated Independent School District
Del Rio, Texas

Special Education Program
Region XVI Educational Service Center
Amarillo, Texas

Comprehensive Infant Intervention Program
Edgewood Independent School District
San Antonio, Texas

Birth to Three Project for Infants at High Risk for Emotional Disorder
Children's Mental Health Services of Houston
Houston, Texas

Background for the Study

Consortium members generally agree that early intervention for handicapped children is desirable. However, Consortium projects generally did not have systematic data to support the effectiveness of early intervention by member projects. Consequently, there was a need to study the impact of Consortium projects, especially in terms of cost effectiveness and parent involvement. It was hoped that such information would enable the Consortium to serve in a more effective advocacy role. An additional factor was that birth through two intervention for the handicapped is relatively new, and very few, if any, of the Consortium projects were in existence before 1975.

At the July, 1977 Consortium meeting, Dr. Daniel J. Macy, outlined a possible data collection plan for the Consortium members and the Consortium agreed to pursue development of the plan into a complete study. The Division of Special Education in the Texas Education Agency provided financial support for the study, and Macy Research Associates accepted responsibility for design and implementation of the study.

The design of the study called for collection of data in two general areas:

(A) project description, and

(B) project effectiveness.

Information describing Consortium projects included basic service delivery models, duration of projects, geographical service area, staff size and description, facilities, and kinds and numbers of children served in the projects. The above

information was primarily collected in order to gain an overall picture of Consortium services and to provide data for increasing public awareness.

Another major part of the project descriptive information was the collection of cost data. The basic intent was to obtain cost descriptions that would be generalizable across different projects. While this posed a difficult task, it is necessary for meaningful cost analysis, especially in terms of cost effectiveness comparisons among birth through two projects, early childhood programs, and day care programs.

Relative to project effectiveness, the study called for collection of data about children's progress, family impact, and parent reaction to the projects. Children's progress was to be assessed in terms of gains in objective tests and in terms of changes observed for individual children, in the context of a case study approach. Family impact was to be assessed by means of a case study approach which drew upon observations made by project staff. Questionnaire data were to be used in recording reactions of parents to Consortium projects.

Hence the study sought to describe the Consortium by the collective descriptions of member projects. Such information would greatly assist the Consortium in meeting its established goals and purposes.

Data Collection Procedures

Data collection necessarily relied on the assistance and cooperation of Consortium projects, since financial support for the study did not allow for on-site visitation and data collection. Macy Research Associates (MRA), in cooperation with Ms. Linda Fikes, Chairwoman for the Consortium Committee on Data Collection, and Ms. Gloria Gayley, President of the Consortium, designed an extensive set of documents and instructions for collecting the necessary data. Member projects were then asked to complete and return the documents to MRA for analysis and interpretation.

Documents

Each Consortium project received a data collection packet in November, 1977. Each packet contained instructions and eight different documents for recording data. The following lists each document:

1. PROJECT DESCRIPTION FORM - one copy

   Collected basic descriptive data about each project.

2. COST REPORT - one copy

   Collected cost data for each project.

3. CUMULATIVE RECORD OF CHILDREN SERVED - multiple copies

   Collected basic descriptive data about all children served during project existence.

4. CHILD CASE STUDY - four copies

   Collected case study progress information for a sample of four children from each project.

5. RECORD OF OBJECTIVE TEST SCORES - multiple copies

   Collected objective test scores measuring children's progress in each project.

6. PARENT INVOLVEMENT SHEET - one copy

   Collected information about extent of parent involvement in each project.

7. PARENT REACTION QUESTIONNAIRE - four copies

   Collected parent reaction data for a sample of four parents from each project.

8. FAMILY CASE STUDY - two copies

   Collected case study project impact information for a sample of two families from each project.

Each of the above eight documents was designed to collect a specific kind of information. Detailed directions for completing documents were attached to the front of each document. A complete set of documents and instructions is in the Appendix.

Instructions to projects specified that the data reported in the documents be as accurate as possible, since these data would be used for future planning and decision-making. However, it was also important to keep a reasonable balance between data accuracy and personal hardship in completing the documents. The data collection effort was seen as time-consuming, but not a "backbreaking" task. In cases of undue hardship, projects were instructed to call Ms. Linda Fikes. None of the documents requested personally identifying information for either parents or children.

A cover letter from the Consortium President, Chairwoman of the Committee on Data Collection, and TEA Special Projects representative also accompanied each packet sent to member projects. The letter explained the importance of the study

and solicited member cooperation in the data collection task.

Sample

While the intent of the study was to obtain data from all projects, not all projects returned completed documents. A total of nine of fourteen projects completed documents, which was a return by about 64 percent of Consortium projects. Those projects which reported data are as follows:

Travel Learning Center
Silsbee Independent School District
Silsbee, Texas

Project FAITH (Family Assistance for Infants and Toddlers with Handicaps)
Longview Independent School District
Longview, Texas

Project Throutwo
West Texas Rehabilitation Center
Abilene, Texas

Project PIP (Parents in Partnership)
Garland Independent School District
Garland, Texas

Project Happy Child
Columbia-Brazoria Independent School District
West Columbia, Texas

Developmental Education Birth through Two (DEBT Project)
Lubbock Independent School District
Lubbock, Texas

Infant-Parent Training Program
Austin-Travis County Mental Health/Retardation Center
Austin, Texas

Comprehensive Infant Intervention Program
Edgewood Independent School District
San Antonio, Texas

Project KIDS (Kindling Individual Development Systems)
Dallas Independent School District
Dallas, Texas

The above projects were generally considered representative of the Consortium as a whole.

Only two of the nine reporting projects failed to return all eight of the documents. One project did not return a PARENT INVOLVEMENT SHEET, and one project did not return the FAMILY CASE STUDY documents.

Pre-post measure of children's progress on objective tests were returned by five of the nine projects. Two projects reported that they had not yet collected scores which met the 12-month pre-post measurement schedule with a sufficient number of children, and one project did not reply to the request for test scores (presumably they also had insufficient data).

The available sample sizes for children's progress, family impact, and parent reaction were as follows:

1) Children's progress	- case studies	N= 34
	- objective tests	N= 126
2) Family impact	- case studies	N= 16
3) Parent reaction	- individual parents	N= 32

One final note regarding samples is that in most cases data collection was restricted to children aged birth through two years. Three Consortium projects served handicapped children aged birth to about six years. However, the study was primarily designed to investigate services and effectiveness relating to the birth through two-year population. This age restriction applied to the age of child at time of entry into a given project. Consequently, many children were actually more than two years old during the project service time.

Analysis and Results

The analysis and results will be reported for each project by an arbitrarily assigned identification number, rather than by project name. Identification of individual projects will be made available to appropriate personnel as requested.

The remainder of this section of the report will address descriptive information about Consortium projects and present information about project effectiveness.

Project Descriptions

Service models. In order to provide a general description of the Consortium project models, data collection was directed to the areas of type of service delivered, the population served, physical facilities and personnel.

Nine projects in the Consortium participated in the data collection process, as described previously. Data were collected through the PROJECT DESCRIPTION FORM, which was designed to summarize information covering a period of time between the beginning of each project through September 30, 1977.

Table 1 outlines each of the projects according to month of operation, months of actual service delivery and type of service.

Four of the projects delivered services in both home-based and center-based instructional arrangements, while two projects served children through a center-based program and one project delivered instruction only in the children's home. Of the other two projects, one delivered services in a mobile classroom and the other offered services through a

combination of home, center and school-based programs. Across all the projects, the months of actual services ranged from 11 to 48 months.

Table 1

Service History of Projects

Project	Months in Operation (through 9-30-77)	Months of Service	Type of Service
1	26	20	Mobile classroom
2	25	24	Home-center
3	26	24	Center
4	26	21	Home-center
5	26	24	Home
6	38	38	Home
7	48	48	Home-center
8	14	11	Home-center
9	20	19	Home-center-school

Table 2 presents a statistical description of the projects' geographical areas, service area populations and ages of children served.

Table 2

Summary of Projects in Terms of Service Area and Population

	Mean	Standard Deviation	Range
Square Miles in Service Area	2,165.7	3,859.1	87.5-12,000
Total Population in Service Area	337,337.8	345,172.5	14,000-950,000
Average Age of Children (months)	20.9	4.0	14.5-28.2

The geographical areas, as well as the populations represented in the projects' service areas, indicate a diversity of instructional arrangements among the projects. The projects were located in both urban and rural areas with general populations ranging from 14,000 to 950,000 persons. Service areas ranged from an area as small as 87.5 square miles to an area as large as 12,000 square miles.

The average age of children served in the projects ranges from 14.5 to 28.2 months, with a mean of 20.9 months. Six of the projects offered services to children at birth, if the mother was under 18 years of age. The other two projects began serving infants at one month of age. One project continued services for children as old as 83 months, but the oldest child served by the other eight projects was set at 47 months for four projects; 36 months for three projects; and 44 months for one project. Table 3 gives geographical area and population served for each individual project.

The following is a brief summary of each of the projects' physical facilities.

Project 1: Instruction is delivered through a 30-foot custom mobile classroom, which includes multi-purpose areas for classrooms, therapy, screening and examination rooms, library and kitchen.

Project 2: The home-center arrangement is operated from an elementary school which provides space for an office, library, classroom, work and storage areas.

Project 3: A rehabilitation center houses this center-based program, which has access to the facilities on the six-

Table 3

Service Area and Population
for Individual Projects

Project	Square Miles in Service Area	Total Population in Service Area	Average Age of Children Served (months)
1	156	24,000	19.0
2	3,568	197,100	22.0
3	12,000	222,000	22.6
4	93	120,000	24.0
5	315	14,000	18.0
6	87	178,480	21.6
7	1,675	500,000	14.5
8	1,246	830,460	28.2
9	351	950,000	18.0

acre center. These include a gymnasium, classrooms, therapy rooms, and medical clinic.

Project 4: The home-center program operates two classrooms in a special services center for office space and infant stimulation classes.

Project 5: The home program operates from a preschool which provides office space and conference rooms.

Project 6: The public school district provides space for offices, storage, library and diagnostic rooms for the home-based program.

Project 7: The home-center program is housed in a former private school building with six classrooms and four offices.

Project 8: The home-center program operates from an early childhood campus for the handicapped in the public

school district. Facilities include classroom space, playground and large motor area.

Project 9: Offices and infant stimulation classrooms for this home-center-school based program are located in a public school building, along with a university affiliated center. Early childhood classes are housed in five elementary schools.

Data on the numbers and types of personnel were also gathered according to two major categories: (1) budgeted personnel and (2) non-budgeted personnel which include those persons whose services were available or contributed to the projects but were not specifically budgeted. Both categories included full-time and part-time personnel. Data did not include staff members who worked exclusively with children age three years or older. Reporting was based on the staff of each project as it was on June 30, 1977 or on May 30, 1977 for those projects not operating during the summer.

Table 4 presents descriptive statistics on the frequencies of persons serving in various positions on the projects' staffs. This table only describes the budgeted full-time personnel. The category labelled as "other" included such staff members as nurse, community service specialist, bus driver, custodian, home liaison, and evaluator.

Five of the projects reported budgeted part-time personnel totaling 16 staff members. These part-time staff members were listed as support professionals such as counselor, psychologist, and physical therapist. Only two persons were reported as full-time contributed personnel. These were both paraprofessionals

Table 4

Number of Budgeted Full-Time Personnel

Personnel	Median	Mode	Range	Total
Teachers	3	2;3	0-9	28
Paraprofessionals/aides	1	0;2	0-4	12
Managerial	1	1	0-4	11
Secretarial/clerical	1	1	1-2	11
Support professionals	1	0	0-5	14
Other	0	0	0-2	6

from one project. Three projects reported a total of 23 part-time contributed staff members, which included teachers, support professionals, and volunteers. Table 5 provides a listing of the staff budget patterns for individual projects.

Table 5

Staff Budget Patterns

	Budgeted Personnel		Non-budgeted Personnel	
Project	Full-time	Part-time	Full-time Contributed	Part-time Contributed
1	7	0	0	0
2	6	2	0	3
3	7	4	0	0
4	11	0	0	0
5	7	0	0	0
6	11	4	0	9
7	19	3	0	0
8	5	3	2	0
9	9	0	0	11
Total	82	16	2	23

Table 6 presents the frequencies of instructional personnel by educational level. (Some projects included part-time

staff members while other projects did not.) The most highly represented educational level was the bachelor degree, followed almost equally by master degree and high school level. Four aides had earned college degrees, and three additional aides reportedly had several years of college. Table 6 includes only those personnel giving direct instructional service to children. Staff who worked exclusively with children three years or older are not included in Table 6.

Table 6

Frequencies of Instructional Personnel by Educational Level

	Educational Level			
Personnel	High School	Bachelor	Master	Total
Teacher	6	11	14	31
Aide	12	4	0	16
Other	0	7	5	12
Total	18	22	19	59

Table 7 gives the descriptive statistics for the years of teaching experience of the projects' instructional staffs. The instructional staff included teachers in their first year of teaching and ranged to a teacher with 14 years' experience.

Major areas of professional study and the frequency of each for teachers included: communications disorders or speech therapy, ten; special education, four; early childhood, three; elementary education, two; and physical therapy, one.

Areas of study for the aides were: English, two; and one each for sociology, business, child development, social work,

Table 7

Years of Teaching Experience
for Instructional Staff

Instructional Personnel	Years Teaching N*	Mean	Standard Deviation	Range	Years in Special Education Mean	Standard Deviation	Range
Teachers	19	4.3	3.6	1-14	3.1	2.6	1-10
Aides	11	2.9	2.2	1- 7	2.0	1.0	1- 4
Other	10	6.0	4.6	1-13	4.0	3.6	1-12

*The sample N does not correspond to N's reported in Table 6 due to incomplete reporting of data.

and elementary education.

The "other" personnel category reported the following areas of professional study: speech pathology, five; physical therapy, three; and one each for occupational therapy, special education, psychology and home economics.

Children served. Information concerning the total numbers of children served, as well as pertinent demographic data, was gathered from the various projects in the Consortium. Data were collected through the CUMULATIVE RECORD OF CHILDREN SERVED, which was designed to include all children (regardless of age) officially served in the Consortium projects through September 30, 1977. For each child, information was collected by sex, ethnicity, handicapping conditions, and entry/exit dates (yielding the number of months of service). Since most projects served only children two years of age and under, and some projects served children through the age of five or older, data

collection was divided into two categories: (1) children age zero through two years and (2) children age three years or older.

Since the nine projects varied according to type of program, geographical location, budget, and initial starting date, there was a wide range in the numbers of students served by each project. Tables 8 and 9 present demographic data collected from the nine projects for the children age birth through two years.

Table 8

Demographic Data for Children Aged Birth through Two Years at Project Entry

Project	Total	Sex		Ethnicity				Number of Months Enrolled in Project		
		Male	Female	Anglo	Black	Mex-Am	Other	Mean	S.D.*	Range
1	31	18	13	20	11	0	0	12.9	7.0	1-22
2	49	23	26	41	6	0	2	10.8	7.2	1-25
3	95	64	31	**69	7	16	1	11.2	7.1	1-25
4	70	51	19	53	11	4	2	9.0	6.2	1-22
5	17	11	6	11	5	1	0	11.4	6.7	1-22
6	238	139	99	102	52	79	5	11.4	7.7	1-36
7	236	141	95	107	51	77	1	15.4	8.5	1-44
8	25	15	10	9	0	16	0	5.6	4.6	1-12
9	45	27	18	19	17	8	1	8.5	4.4	1-19
Total	806	489	317	431	160	201	12	12.0	7.4	1-44
Percent		60.7	39.3	53.6	19.9	25.0	1.5			

*Standard Deviation

**Total does not correspond due to incomplete data.

A total of 806 children age birth through two was served. By project, the total number of children (cumulative) served ranged from 17 to 238. Overall, more males (60.7%) than females (39.3%) received services in the nine projects. In all but one project, more males than females were served. By ethnicity, more than 50 percent of the children were Anglo, 25 percent were Mexican-American and about 20 percent were Black.

About 40 percent of the children (Table 9) were reported as having multiple handicapping conditions. In five of the nine projects, the majority of the children served were multiply handicapped. According to primary handicapping condition, the handicap reported most often was mental retardation (26.0 percent), followed in order by developmental delay (22.1 percent), other (17.1 percent), orthopedic (14.3 percent), language (9.7 percent), hearing (3.9 percent), vision (3.9 percent), and emotionally disturbed (3.0 percent). The handicapping condition labelled "other" usually represented children with physical disabilities other than orthopedic. When the frequencies of all handicapping conditions (both primary and secondary handicaps) were tabulated, developmental delay was described as the most prevalent condition, and emotionally disturbed remained the least prevalent handicap. The most frequently reported secondary handicapping condition was language delay.

Across all the projects for children aged zero through two, the average length of time in the program was 12.0 months, with a standard deviation of 7.4 months. The length of time in the program ranged from one to 44 months.

Table 9

Frequency of Handicapping Conditions Among Children Aged Birth through Two Years at Project Entry

		Project 1	2	3	4	5	6	7	8	9	Total	Percent
Primary Hand. Cond.	MR	8	*8	16	29	0	38	77	*0	31	207	26.0
	Orth	1	16	24	1	4	28	33	0	7	114	14.3
	Lang	0	4	27	4	1	21	18	1	1	77	9.7
	Dev. Delay	17	14	0	24	3	73	32	10	3	176	22.1
	Aud.	4	1	3	3	0	14	2	4	0	31	3.9
	Vision	0	4	0	2	2	13	9	1	0	31	3.9
	Other	0	0	22	7	7	38	59	0	3	136	17.1
	ED	1	0	3	0	0	13	6	1	0	24	3.0
All Hand. Cond.	MR	9	27	30	29	0	40	85	11	36	267	20.2
	Orth	1	26	67	6	4	42	35	3	15	199	15.0
	Lang	4	27	83	32	3	42	19	9	1	220	16.6
	Dev. Delay	23	32	73	26	5	86	34	15	5	299	22.6
	Aud.	4	3	6	6	0	17	2	4	1	43	3.2
	Vision	0	14	12	8	2	17	9	3	3	58	4.4
	Other	0	0	43	14	7	58	60	0	19	201	15.2
	ED	1	0	10	0	0	19	6	1	0	37	2.8
Number of Handicaps Per Child	1	21	11	9	31	14	163	223	7	11	490	60.9
	2	9	9	17	32	2	67	12	15	32	195	24.3
	3	1	15	22	3	1	7	1	3	2	55	6.8
	4	0	12	47	4	0	1	0	0	0	64	8.0

*Total does not correspond due to incomplete data.

Only three projects offered services to children three years of age and older. Tabulations of the demographic data on these children are presented in Tables 10 and 11. In this age category, 118 children received services. The proportions of males (62.7 percent) and females (37.3 percent) were similar to the male and female proportions reported for the younger children. Again, Anglos were the most highly represented group (52.5 percent), with an increased proportion of Blacks (38.1 percent) and a decreased proportion of Mexican-Americans (8.5 percent).

Table 10

Demographic Data for Children Aged Three Years and Older at Project Entry

Project	Total	Sex		Ethnicity				Number of Months Enrolled in Project		
		Male	Female	Anglo	Black	Mex-Am	Other	Mean	S.D.*	Range
3	9	6	3	8	0	1	0	6.0	3.1	1-10
5	42	22	20	31	10	1	0	10.4	6.5	1-24
9	67	46	21	23	35	8	1	6.9	4.6	1-19
Total	118	74	44	62	45	10	1	8.1	5.2	1-24
Percent		62.7	37.3	52.5	38.1	8.5	0.9			

*Standard Deviation

In contrast to the younger children, fewer of the older children were classified as multiply handicapped. Among the handicapping conditions, mental retardation was also listed most often as a primary handicap (33.4 percent), followed in order by language delay (22.2 percent), developmental delay

Table 11

Frequency of Handicapping Conditions
Among Children Aged Three Years
and Older at Project Entry

		Project 3	5	9	Total	Percent
Primary Handicapping Conditions	MR	0	*4	35	39	33.4
	Orth	0	3	11	14	12.0
	Lang	7	11	8	26	22.2
	Dev. Delay	0	17	0	17	14.5
	Aud.	1	1	0	2	1.7
	Vision	0	0	0	0	0.0
	Other	1	3	13	17	14.5
	ED	0	2	0	2	1.7
All Handicapping Conditions	MR	1	4	42	47	28.1
	Orth	1	4	13	18	10.8
	Lang	9	16	25	50	29.9
	Dev. Delay	0	20	0	20	12.0
	Aud.	1	2	0	3	1.8
	Vision	0	2	0	2	1.2
	Other	1	8	14	23	13.8
	ED	1	2	1	4	2.4
Number of Handicaps Per Child	1	6	29	39	74	63.2
	2	2	7	28	37	31.6
	3	0	5	0	5	4.3
	4	1	0	0	1	0.9

*Total does not correspond due to imcomplete data.

(14.5 percent), other (14.5 percent), orthopedic (12.0 percent), hearing (1.7 percent) and emotionally disturbed (1.7 percent). Visual disability was not listed as a primary handicap for any child.

On the average, the older children had received services for a shorter period of time than the younger children. The average length of time in the program was 8.1 months with a standard deviation of 5.2 months. The number of months of instruction ranged from one to 24.

Parent involvement. Each of the nine participating projects was also asked to complete a PARENT INVOLVEMENT SHEET for their project. The purpose of the sheet was to gather information about the extent of parent involvement in each respective project. Part I of the sheet addressed those activities offered by the project for parents, and Part II concerned those services provided to each project by parents.

Those activities offered by the project (Part I) and those services provided by parents (Part II) were to include only those activities and services during the time from the initiation of each project through September 30, 1977. Project personnel were further instructed to report only those activities offered (Part I) which included one or more parents of children aged zero through two years at the time of entry into the project. Project personnel were also to report only those services which were provided by parents (Part II) whose children were aged zero through two years at the time of entry into the project.

In the event a project had not maintained the information requested in their project records, they were asked to report the most accurate estimate possible of the information. Project personnel were further instructed to indicate that portion of the information reported which was obtained from records maintained by the project. Eight of the nine reporting projects returned completed involvement sheets.

The first item in Part I of the document, which concerned those project activities offered for parents, asked project staff to provide a brief description of the kinds of activities the project conducted for the parents. Results show that those activities most often cited by the projects included various types of parent training activities (six) such as child-parent training, behavior management training, etc. Counseling was also mentioned in terms of individual needs, group sessions and family counseling (five). Other activities cited included various workshops and group activities (ten), special picnics and holiday gatherings for the family (one) and classroom participation type activities (one).

The information reported in Chart I provides a summary of the data obtained in response to items two and three in Part I of the PARENT INVOLVEMENT SHEET. The second item in Part I asked project staff to indicate the number of parents involved in the project who either attended or participated in one or more of the activities offered for the parents by the project. The data show that the average number of parents who either attended or participated in one or more of the activities offered by the project was approximately 68 parents per project.

A total of 547 parents had been involved in one or more project activities. The range for this data, which simply provides a measure of the full distance along the number scale over which the responses varied, was 132. The upper limit was 150 and the lower limit for these responses was 18. Six of the eight projects indicated that the information provided was maintained in their project records.

Chart I
Summary for Part I of
Parent Involvement Sheet

Item 2: How many parents have attended or participated in one or more activities offered for the parents?

Response	Frequency	Response	Frequency
150	1	36	2
125	1	26	1
84	1	18	1
72	1		

Total = 547 Average = 68.4 Range = 132

Item 3: What is the total number of hours of project activities conducted for parents?

Response	Frequency	Response	Frequency
693.5	1	97	1
663	1	42.5	1
300	1	40	1
148	1	15	1

Total = 1,999 Average = 249.9 Range = 678.5

In terms of item three in Part I of the involvement sheet, the data show that the average number of hours of project activities conducted by the eight projects for the participating parents was approximately 250 hours per project.

The range for this data was 678.5 with the upper limit being 693.5 and the lower limit 15. Almost 2,000 hours of activities had been conducted by Consortium projects. Seven of the eight projects indicated that this information was maintained in their project records.

The information contained in Chart II provides a summary of the data obtained in response to items four through seven in Part II of the involvement sheet. The data show that in response to item four, the average number of parents who provided some type of service to the project was approximately 26 parents per each of the five projects reporting non-zero data. A total of 132 parents had provided some type of service to Consortium projects. One project did not respond to the item. The range for this data was 42. The upper response score limit was 49 with the lower limit being zero. Three of the projects indicated that this information was maintained in their project records.

The data further indicate that on the average parents in five of the projects provided approximately 3,355 hours of service to their own children in the form of formal or guided instruction. Project parents had provided a total of 16,777 hours of instruction to their own children. The range for these data was 9,310 with upper and lower response score limits of 9,612 and 302 respectively. Three of the projects indicated that this information was maintained in their project records.

The data relative to item 6 show that in only two projects did parents provide substantial instruction to children other than their own. The average number of contact hours of

Chart II

Summary for Part II of

Parent Involvement Sheet

Item 4: How many parents have provided some type of service to your project?

Response	Frequency	Response	Frequency
49	2	7	1
15	1	0	2
12	1	(blank)	1

Total = 132 Average = 26.4* Range = 42

Item 5: What is the total number of contact hours of service provided by parents in the formal or guided instruction of their own children?

Response	Frequency	Response	Frequency
9,612	1	302	1
4,963	1	0	2
1,128	1	"unknown"	1
772	1		

Total = 16,777 Average = 3,355.4* Range = 9,310

Item 6: What is the total number of contact hours of service provided by parents in the formal or guided instruction of other children (not their own)?

Response	Frequency	Response	Frequency
116	1	0	5
26	1	"minimal"	1

Total = 142 Average = 71* Range = 90

Item 7: What is the total number of hours of service provided by parents in all areas other than instruction to children?

Response	Frequency	Response	Frequency
2,820	1	37	1
300	1	0	3
150	1	(blank)	1

Total = 3,307 Average = 826.7* Range = 2,783

*Averages do not include zero or blank responses.

service provided by parents in the formal or guided instruction of other children was approximately 71 hours per project. A total of 142 hours of instruction was provided. The range for this data was 90. The upper and lower response score limits were 116 and 26 respectively. Four of the other six projects indicated that no contact hours of service had been provided by parents in the instruction of other children. Another project simply indicated that the number of hours of service provided by parents in this area was "minimal". The one remaining project did not respond to the item. Only one project indicated that this information was maintained in their project records.

Data obtained in response to item 7 indicate that of the four projects reporting non-zero data, the average number of hours of service provided by parents in all areas other than instruction to children was approximately 827 hours. Parents provided a total of 3,307 hours of service to projects in areas other than instruction. Three of the remaining projects indicated that their parents had not provided any hours of service in areas other than instruction to children. The other project did not respond to the item. The range for this set of data was 2,783. The upper limit was 2,820 and the lower limit 37. Two of the projects indicated that this information was maintained in their project records.

The final item on the PARENT INVOLVEMENT SHEET asked the projects to briefly describe the kinds of services provided by parents in noninstructional areas. Responses were given by five projects, and a wide range of service activities was described. Services provided by parents included: hosting

parties, making toys, assisting at open house, mailing material, providing transportation, providing meeting places, telephoning, maintaining special interest groups, providing materials and equipment, visiting with other parents, assisting in child referrals and screening, money raising activities, disseminating project information, and supporting lobbying efforts.

Cost reports. Further descriptions of the Consortium projects were provided through cost analysis. The nine projects participating in data collection submitted cost reports for three years: 1975-76, 1976-77 and 1977-78. To allow for uniform analysis the fiscal years were arbitrarily set from July 1 of each year to June 30 of the following year. Projects reported budget figures regardless of the age of children served.

Cost analysis consisted of the examination of the projects' budgeted expenses according to four major categories: service delivery, staff training, model development, and other expenses such as management and project operating routines. Service delivery was defined as the portion of costs that would be incurred if the project delivery model were replicated, and the project per se were discontinued. The portions of costs in staff training, model development, and other areas were defined as unique to the project operation and would not be incurred at a replication site (assuming the replication site had appropriately trained staff). Budget sources were also identified as either nonlocal (federal or state funding) or local. Additional information was gathered in the form of

contributed nonbudgeted costs which were donated or provided to the project and not included in the official budget. Actual amounts were reported as local or nonlocal funding, however, the costs in each of the four major expense areas were estimated by the projects by assigning a percent of the total budget to each area.

Table 12 gives total budget figures for each project for each of three years. The data show that all budgets increased from the 1975-76 to 1976-77, but that only two project budgets increased substantially the following year. Five of the nine project budgets showed substantial decrease from the 1976-77 year to the 1977-78 year.

Table 12
Total Project Budgets

Project	1975-76	1976-77	1977-78
1	$ 71,052	$ 79,909	$ 80,206
2	$ 84,140	$ 114,504	$ 97,190
3	$115,119	$ 150,443	$ 157,200
4	$144,231	$ 149,448	$ 108,300
5	$ 89,450	$ 118,228	$ 119,991
6	$112,819	$ 141,000	$ 85,777
7	$197,676	$ 273,707	$ 246,498
8	not reported	$ 80,000	$ 106,982
9	$ 60,000	$ 224,004	$ 209,353
Total	$874,487	$1,331,243	$1,211,497

Tables 13-15 present more detailed cost data in showing the percent and amount budgeted for service delivery, staff training, model development, and other during each of the three

years. Note that projects reported exact total budget figures and that only approximate or estimated percents of total budget cost were reported for the four budget areas.

Table 13
Costs Reported for 1975-76

Project		Source: Service Delivery	Staff Training	Model Development	Other	Total
1	P*	54	7	39	0	100
	A*	$ 38,368	$ 4,974	$ 27,710	$ 0	$ 71,052
2	P	60	14	12	14	100
	A	$ 50,484	$11,780	$ 10,096	$ 11,780	$ 84,140
3	P	27	8	46	19	100
	A	$ 31,082	$ 9,209	$ 52,955	$ 21,873	$115,119
4	P	51	13	21	15	100
	A	$ 73,558	$18,750	$ 30,288	$ 21,635	$144,231
5	P	55	20	15	10	100
	A	$ 49,198	$17,890	$ 13,417	$ 8,945	$ 89,450
6	P	65	15	15	5	100
	A	$ 73,332	$16,923	$ 16,923	$ 5,641	$112,819
7	P	80	5	5	10	100
	A	$158,141	$ 9,884	$ 9,884	$ 19,767	$197,676
8	P	Not Reported				
	A	Not Reported				
9	P	47	15	3	35	100
	A	$ 27,960	$ 9,000	$ 2,040	$ 21,000	$ 60,000
Total	P	57	11	19	13	100
	A	$502,123	$98,410	$163,313	$110,641	$874,487

*(P) Percent
(A) Amount

Table 14

Costs Reported for 1976-77

Project		Source: Service Delivery	Staff Training	Model Development	Other	Total
1	P*	80	4	16	0	100
	A*	$ 63,927	$ 3,196	$ 12,786	$ 0	$ 79,909
2	P	52	8	23	17	100
	A	$ 59,542	$ 9,160	$ 26,336	$ 19,466	$ 114,504
3	P	75	3	10	12	100
	A	$112,832	$ 4,513	$ 15,045	$ 18,053	$ 150,443
4	P	53	8	21	18	100
	A	$ 79,207	$ 11,956	$ 31,384	$ 26,901	$ 149,448
5	P	70	10	10	10	100
	A	$ 82,759	$ 11,823	$ 11,823	$ 11,823	$ 118,228
6	P	75	15	5	5	100
	A	$105,750	$ 21,150	$ 7,050	$ 7,050	$ 141,000
7	P	80	5	5	10	100
	A	$218,966	$ 13,685	$ 13,685	$ 27,371	$ 273,707
8	P	20	25	25	30	100
	A	$ 16,000	$ 20,000	$ 20,000	$ 24,000	$ 80,000
9	P	86	5	3	6	100
	A	$192,643	$ 11,200	$ 6,721	$ 13,440	$ 224,004
Total	P	70	8	11	11	100
	A	$931,626	$106,683	$144,830	$148,104	$1,331,243

*(P) Percent

(A) Amount

Table 15

Costs Reported for 1977-78

Project		Source: Service Delivery	Staff Training	Model Development	Other	Total
1	P*	93	1	6	0	100
	A*	$ 74,592	$ 802	$ 4,812	$ 0	$ 80,206
2	P	60	5	10	25	100
	A	$ 58,314	$ 4,860	$ 9,719	$ 24,297	$ 97,190
3	P	76	4	8	12	100
	A	$119,472	$ 6,288	$ 12,576	$ 18,864	$ 157,200
4	P	51	14	18	17	100
	A	$ 55,233	$15,162	$ 19,494	$ 18,411	$ 108,300
5	P	65	15	15	5	100
	A	$ 77,994	$17,999	$ 17,999	$ 5,999	$ 119,991
6	P	90	5	0	5	100
	A	$ 77,199	$ 4,289	$ 0	$ 4,289	$ 85,777
7	P	90	0	0	10	100
	A	$221,848	$ 0	$ 0	$ 24,650	$ 246,498
8	P	20	15	35	30	100
	A	$ 21,396	$16,047	$ 37,444	$ 32,095	$ 106,982
9	P	85	2	7	6	100
	A	$177,950	$ 4,187	$ 14,655	$ 12,561	$ 209,353
Total	P	73	6	9	12	100
	A	$883,998	$69,634	$116,699	$141,166	$1,211,497

*(P) Percent

(A) Amount

Tables 16-18 show the trends in the percents of total project budgets allocated for service delivery, staff training, and model development. Table 19 contains the trends in percents of budgets totalled for the nine reporting projects for each of the four budget areas. Inspection of these data shows that over the three-year period, relative expenditures for staff training and model development decreased, while relative expenditures for service delivery increased. This would be the expected budget allocation pattern for developmental projects.

Table 16

Trend in the Percent of Total Budget Expended for Service Delivery

Project	1975-76	1976-77	1977-78
1	54	80	93
2	60	52	60
3	27	75	76
4	51	53	51
5	55	70	65
6	65	75	90
7	80	80	90
8	--	20	20
9	47	86	85
Total	57	70	73

For the 1975-76 fiscal year a total of $874,487 was budgeted for the nine projects. Although there was some variation in the emphasis of the different projects, overall 57 percent of the costs were assigned to service delivery, followed by

Table 17

Trend in the Percent of Total Budget Expended for Staff Training

Project	1975-76	1976-77	1977-78
1	7	4	1
2	14	8	5
3	8	3	4
4	13	8	14
5	20	10	15
6	15	15	5
7	5	5	0
8	--	25	15
9	15	5	2
Total	11	8	6

Table 18

Trend in the Percent of Total Budget Expended for Model Development

Project	1975-76	1976-77	1977-78
1	39	16	6
2	12	23	10
3	46	10	8
4	21	21	18
5	15	10	15
6	15	5	0
7	5	5	0
8	--	25	35
9	3	3	7
Total	19	11	9

Table 19
Trend in Budget Expenditures
Totalled for All Projects

Budget Expenditure	1975-76	1976-77	1977-78
Service delivery	57%	70%	73%
Staff training	11%	8%	6%
Model Development	19%	11%	9%
Other	13%	11%	12%

19 percent for model development, 13 percent for other expenses, and 11 percent for staff development. Overall, the proportion of costs assigned to service delivery increased to 70 percent for the 1976-77 fiscal year, leaving 11 percent each in model development and other expenses and eight percent for staff training. The combined budgets for the year also increased to $1,331,243. A total of $1,211,497 was budgeted for the 1977-78 year. Service delivery accounted for 73 percent of this sum, other expenses for 12 percent, model development for 9 percent, and staff training for 6 percent. One should note that service delivery would presumably be the cost incurred in project replication.

Table 20 shows the trend in percent of project budgets funded by local monies, and Table 21 gives the amounts of contributed nonbudgeted monies for Consortium projects. Contributed costs included costs of services, facilities, or resources contributed to the project and for which there was no explicit budget item. Hence, these items were not contained in total budget costs reported in previous tables. Contributed

Table 20

Percent Budget Funded by Local Monies

Project	1975-76	1976-77	1977-78
1	0	0	0
2	100	100	100
3	0	5	18
4	0	0	0
5	0	0	0
6	15	15	100
7	26	55	91
8	--	0	19
9	0	43	42
Total	17	29	45

Table 21

Contributed Nonbudgeted Costs

Project	1975-76	1976-77	1977-78
1	$ 750	$ 750	$ 750
2	$ 6,050	$ 8,065	$13,125
3	$ 0	$ 0	$ 0
4	$ 4,500	$ 4,500	$ 4,500
5	$ 8,000	$12,000	$14,000
6	$ 2,519	$ 2,990	$ 0
7	$ 0	$ 0	$ 0
8	--	$ 2,000	$ 5,000
9	$12,200	$17,200	$17,200
Total	$34,019	$47,505	$54,575

nonbudgeted costs might include such things as building rental, utilities, or appraisal services contributed by the projects' host institution or other external services.

Tables 20 and 21 also show that only a few projects received nonlocal funds exclusively. Most projects increased their local financial support over the three-year period, and three projects were totally or almost totally funded by local monies by the 1977-78 year.

To estimate the cost per child for each project and across all projects, the numbers of children served by each project during each fiscal year were tabulated. This tabulation included all children regardless of age at time of entry into a project. Since some children received instruction for the full year, while others were served for partial years, the concept of a child-month unit was devised to equalize the length of service. The child-month unit was calculated by totalling the numbers of children served for each month in each project. With this method, each child was counted repetitively for each month that he/she received services in the project. Totals were added together to obtain the total number of child-month units for each project during the year. If a child received seven months of service during the year, then seven child-month units were added to the total. Total child-month units could then be used to divide into a budgeted amount, resulting in a computed cost per child per month.

The data presented in Tables 22-24 show that a grand total of 9,848 child-month units of service was provided during 2¼ years, beginning in 1975-76. The cost per child-month was

usually greatest during the 1975-76 year, and the cost per child-month varied greatly across individual projects. The lowest child-month cost was $75 for project #6 in 1975-76, and the highest was $404 for project #4 in 1975-76 (see Table 22). Actually, project #1 showed the highest cost of $548 for the first quarter of 1977-78, but this was undoubtedly inflated due to the lack of service during the summer months.

Table 25 contains the cost per child-month for each project across three years. The data generally show a reduction in service delivery cost for six of the nine projects. The greater costs during the 1975-76 year were likely a result of fewer students being served during the first year of project operation. By the same token, the child-month cost for all of 1977-78 would likely be less than that computed for the first quarter, since the increased total year student load would make the project more cost effective.

The computation of average and median child-month costs for the nine reporting Consortium projects (see Table 26) show that the overall median service delivery cost was $181 for the 2¼ year period. The lowest median cost was $177 per child-month unit, and the highest median cost was $254. Table 26 indicates that average and median costs decreased substantially from 1975-76, and costs rose slightly for the first quarter of 1977-78. However, costs may have remained constant from 1976-77 to 1977-78 if data collection had included all of 1977-78.

One additional factor would increase the actual cost of service delivery per child-month unit. Most Consortium projects

Table 22

Cost Per Child Based on Months of Service for 1975-76

Project	Total Child-Month Units	Approximate Cost Service Delivery	Total Budget	Cost per Child-Month	
				Service Delivery (Approx.)	Total Budget
1	135	$ 38,368	$ 71,052	$284	$526
2	142	$ 50,484	$ 84,140	$355	$592
3	214	$ 31,082	$115,119	$145	$538
4	182	$ 73,558	$144,231	$404	$792
5	220	$ 49,198	$ 89,450	$224	$406
6	971	$ 73,332	$112,819	$ 75	$116
7	1,270	$158,141	$197,676	$124	$155
8	Not Reported				
9	83	$ 27,960	$ 60,000	$337	$723
Total	3,217	$502,123	$874,487	$156	$272

Table 23

Cost Per Child Based on Months of Service for 1976-77

Project	Total Child-Month Units	Approximate Cost Service Delivery	Total Budget	Cost per Child-Month: Service Delivery (Approx.)	Cost per Child-Month: Total Budget
1	256	$ 63,927	$ 79,909	$249	$312
2	335	$ 59,542	$ 114,504	$177	$342
3	733	$112,832	$ 150,443	$154	$205
4	426	$ 79,207	$ 149,448	$186	$351
5	384	$ 82,759	$ 118,228	$215	$308
6	1,115	$105,750	$ 141,000	$ 95	$126
7	1,307	$218,966	$ 273,707	$167	$209
8	126	$ 16,000	$ 80,000	$127	$635
9	651	$192,643	$ 224,004	$296	$344
Total	5,333	$931,626	$1,331,243	$175	$250

Table 24

Cost Per Child Based on Months of Service for 1977-78

Project	Total Child-Month Units	Approximate Cost Service Delivery	First Quarter Budget*	Cost per Child-Month	
				Service Delivery (Approx.)	Total Budget
1	34	$ 18,648	$ 20,051	$548	$589
2	101	$ 14,578	$ 24,297	$144	$240
3	276	$ 29,868	$ 39,300	$108	$142
4	74	$ 13,808	$ 27,075	$186	$366
5	92	$ 1,949	$ 29,997	$212	$326
6	217	$ 19,299	$ 21,444	$ 89	$ 99
7	283	$ 55,462	$ 61,624	$196	$217
8	30	$ 5,349	$ 26,745	$178	$891
9	191	$ 44,487	$ 52,338	$233	$274
Total	1,298	$203,448	$302,871	$157	$233

*Figures only include the first quarter of 1977-78 since data collection was only through the end of September, 1977.

Table 25

Trend in Cost per Child-Month for

Service Delivery for Individual Projects

Project	1975-76	1976-77	1977-78
1	$284	$249	$548
2	$355	$177	$144
3	$145	$154	$108
4	$404	$186	$186
5	$223	$215	$212
6	$ 75	$ 95	$ 89
7	$124	$167	$196
8	--	$127	$178
9	$337	$296	$233

Table 26

Trend in Average and Median Cost per Child-Month

for Consortium Projects for Service Delivery

Cost	1975-76	1976-77	1977-78	Overall
Average	$243	$185	$210	$213
Median	$254	$177	$186	$181

received nonbudgeted monies (see Table 21), and all or a portion of these monies went for service delivery. However, these monies would not substantially increase costs, since overall contributed monies were only about four percent of total budget costs (reported in Table 12).

A final consideration regarding cost data is the age of children served in Consortium projects. As noted previously, some projects served children only birth through two years at time of project entry, and others served children birth through about six years. While the cost per child-month unit might vary as a function of child's age, there was no attempt to determine costs separately for children aged birth through two years and for older children. Projects #3, #5, and #9 reported serving children older than two years at project entry, but cost computations were the same for all children served in these projects, regardless of age.

The foregoing discussion considered many aspects of project costs, but another side of cost data is the cost saved through services contributed by parents of the handicapped children served in Consortium projects. Parents reportedly provided children 16,919 hours of instruction to project children (see Chart II, items five and six), and this constituted a minimum savings of $44,835 to Consortium projects (assuming a minimum wage of $2.65 per hour). If the instruction had been delivered by certified professionals, the cost for 16,919 hours of instruction would have been $131,122 (assuming an hourly rate of $7.75). While the parents were typically not certified professionals, they had received special training and assistance

in working with their children. If it had been necessary for projects to purchase the instructional hours provided by parents, the overall cost per child-month unit would have been about four to thirteen dollars higher per unit.

The above observation is unfortunately misleading in that parents contributed instructional service in only five of the nine reporting projects, but the above analysis adjusts that financial contribution across all nine projects. The financial impact of parent involvement is much more dramatic when computed for an individual project. Of the 16,919 hours of instruction contributed by parents, 9,728 hours were contributed in project #2.

Table 27 shows the results of these computations for project #2, in which parents contributed 9,728 hours of instructional service. The computations show that if the project were to have purchased these contributed hours at minimum wage, the cost per child-month unit would have been about $46 higher. This would have resulted in a total budget increase of $25,779 for the same 2¼ year period.

If project #2 were to have purchased these 9,728 contributed hours at a professional wage rate, the cost per child-month unit would have been $129 to $135 more per unit. This would have meant a total budget increase of $75,392 for the 2¼ year period. The computations in Table 27 certainly point to the cost effectiveness of parent involvement when that involvement leads to parents providing direction instruction of their child.

Table 27

Increase in Cost per Child-Month Unit for Project #2

When Purchase Contributed Instruction Hours

	1975-76	1976-77	1977-78
Number of child-month units	142	335	101
Total cost of service delivery	$50,484	$ 59,542	$14,578
Cost per child-month unit	$ 355	$ 177	$ 144
Additional cost of service delivery when charged minimum wage ($2.65/hour)*	$ 6,445	$ 14,694	$ 4,640
Total cost of service delivery when purchase contributed hours	$56,929	$ 74,236	$19,218
Cost per child-month unit	$ 401	$ 222	$ 190
Added cost per child-month unit at minimum wage ($2.65/hour)	$ 46	$ 45	$ 46
Additional cost of service delivery when charged professional wage ($7.75/hour)*	$18,848	$ 42,973	$13,571
Total cost of service delivery when purchase contributed hours	$69,332	$102,515	$28,149
Cost per child-month unit	$ 488	$ 306	$ 279
Added cost per child-month unit at professional wage ($7.75/hour)	$ 133	$ 129	$ 135

*This item is computed by prorating the total added service delivery cost (hourly rate times number of child-month units) for each year based on the number of child-month units.

Another cost benefit of parent involvement was 3,307 hours of noninstructional service provided to Consortium projects. In terms of minimum wage, this contribution could be valued at $8,764, which was an average of $2,191 for the four projects reporting contributed noninstructional service (see Chart II). Project #8 reported a total of 2,820 hours of such contributed service, and this was a cost benefit of $7,473 for this project (in terms of minimum wage).

Effectiveness of Projects

A goal of the study was obviously to attempt to document the effectiveness, if any, of Consortium projects. Project effectiveness was measured in terms of children's progress, family impact, and parent reaction and involvement. However, the study was primarily descriptive in nature and did not possess rigorous experimental control. For example, without the benefit of an adequate control, any observed progress in children served in the project cannot be attributed to Consortium intervention with certainty. Human growth and maturation would be an alternative explanation and may account for all or part of any observed progress in children served.

On the other hand, the absence of experimental control does not mean that any observed progress was not due to Consortium intervention. The strategy must be first to document whatever progress and impact may have taken place while children and families were served in Consortium projects. Once observed progress and improvement are established, one may then proceed to try to determine the probable causes of observed

changes. In some cases the most plausible and believable explanation may be Consortium intervention, but in other cases, alternative explanations may be more appealing.

Children's progress. The study collected two measures of children's progress. One was objective test scores measured on a pre-post schedule, and the other was a selective sample of case study reports for individual children. Measures of children's progress were restricted to the birth through two population.

Consortium projects were asked to report observations of children's developmental progress through pre-post measures with an objective or standardized test. The objective test may have been a very formal and well standardized instrument or it may even have been a developmental checklist developed in-house by local project staff. The only criteria were that the test be objectively scored and that it yield one or more raw scores expressed in some numeric value. Consortium projects were known to have been using a variety of tests and instuments, and this data collection approach was thought to have been as general as possible.

The conditions for reporting test score data were as follows:

1) the same objective test must have been administered on a pre-post schedule to at least 20 children (aged birth through two years at time of project entry).

2) the time between pretest and posttest must be no less than 12 months and no more than 15 months (the 12-15 months may have included the summer months regardless of whether or not project service continued through the summer).

Objective test scores were received from six of the nine reporting projects. The minimum 12-month time limit for pre-post testing reduced the available data. The following lists the instruments and sample sizes reported by individual projects:

Project	Instrument	Sample Size
1	Bangs and Dodson-Garrett Birth-3 Developmental Scale	25
2	Alpern-Boll Developmental Profile	20
4	Bayley Scales of Infant Development	11
5	Bangs and Dodson-Garrett Birth-3 Developmental Scale	20
6	Koontz Child Developmental Program	34
9	Bayley Scales of Infant Development	16
	Total	126

Total sample sizes for each of the four instruments were as follows:

Alpern-Boll Developmental Profile	20
Bayley Scales of Infant Development	27
Koontz Child Developmental Program	34
Bangs and Dodson-Garrett Birth-3 Developmental Scale	45

Analysis of test score data consisted of repeated-measures ANOVA (analysis of variance) to test the statistical significance of observed pre-post changes. Results of analyses revealed highly significant improvement for all instruments and sample groups. Results will be reported separately for

each instrument, and complete ANOVA summary tables are reported in the Appendix.

The Alpern-Boll Developmental Profile yields scores in five subtest areas: academic, communication, physical, self-help, and social. The Alpern-Boll score for each subtest is expressed in developmental age in months. Table 28, which presents results of analysis for Alpern-Boll scores, shows that the 20 children sampled from this project, made highly significant gains (less than .001) in all subtests. The largest gain between average pre and post scores was in the social subtest, and the smallest gains were in the communication and physical subtests.

The Bayley Scales of Infant Development yield a mental, motor, and behavior subtest score, but projects reported only mental and motor scores. The Bayley yields a raw score which can be converted to developmental age. Table 29 gives analysis results for the 27 children reported with pre-post Bayley scores from two projects. The analysis shows highly significant gains (less than .001) for both mental and motor scores. The ANOVA was computed on Bayley raw scores, but for interpretation and reporting, Bayley scores were converted to developmental age in months, which are reported in Table 29.

The Koontz Child Developmental Program gives five subtest scores: receptive language, expressive language, gross motor, fine motor, and social development. The Koontz scores are in developmental age in months, and Table 30 presents the analysis results for the 34 children reported by one project. Analysis

Table 28

Average Pre-Post Gains and F-test Values for Alpern-Boll Scores*

Subtest		Pre-test	Post-test	Average Gain	F-test	Significance Level
Academic	A**	11.8	19.8	8.0	27.66	.001
	S**	5.8	9.2			
	R**	2-26	6-38			
Communication	A	10.4	21.3	10.9	24.17	.001
	S	9.9	17.6			
	R	2-44	4-80			
Physical	A	10.7	18.6	7.9	32.40	.001
	S	7.5	11.1			
	R	2-26	4-46			
Self-help	A	12.0	22.6	10.6	35.79	.001
	S	7.7	12.9			
	R	4-30	4-46			
Social	A	11.4	23.6	12.2	31.86	.001
	S	7.5	14.6			
	R	4-30	4-50			

*N=20; scores are in months.

**(A) Average
(S) Standard deviation
(R) Range

Table 29

Average Pre-Post Gains and F-test Values for Bayley Scores*

Subtest		Pretest	Posttest	Average Gain	F-test	Significance Level
Mental	A**	7.7	15.4	7.7	59.86	.001
	S**	4.5	7.4			
	R**	0.1-16.7	0.5-30.0			
Motor	A	6.9	14.2	7.3	53.81	.001
	S	3.6	8.5			
	R	0.2-14.6	0.1-30.0			

*N=27; scores are in months.

**(A) Average
(S) Standard deviation
(R) Range

also shows highly significant (less than .001) gains in all subtest areas. The greatest observed gain was in the fine motor area.

The Bangs and Dodson-Garrett Birth-3 Developmental Scale has five subtest areas: language expression, language comprehension, motor, problem solving, and social-personal. This scale yields scores in developmental age (in months), and scores were available for 45 children from two projects. Table 31 gives the results of score analyses and shows that these children also made highly significant gains (less than .001) in all subtest areas. The greatest gain was in the social-personnal subtest area.

Reported test scores demonstrated that the 126 children sampled from six of the reporting nine projects made statistically significant improvement on the selected developmental

Table 30

Average Pre-Post Gains and F-test Values for Koontz Scores*

Subtest		Pre-test	Post-test	Average Gain	F-test	Significance Level
Receptive language	A**	10.5	23.2	12.7	132.19	.001
	S**	9.6	12.0			
	R**	0-48	2-48			
Expressive language	A	8.4	21.2	12.8	81.07	.001
	S	6.6	10.8			
	R	0-24	2-48			
Gross Motor	A	10.4	21.6	11.2	139.52	.001
	S	8.2	11.5			
	R	0-30	2-48			
Fine Motor	A	11.5	25.9	14.4	238.26	.001
	S	9.0	13.1			
	R	0-36	1-48			
Social	A	12.6	26.2	13.6	240.29	.001
	S	10.0	12.3			
	R	0-36	1-48			

*N=34; scores are in months.

**(A) Average
(S) Standard deviation
(R) Range

Table 31

Average Pre-Post Gains and F-test

Values for Bangs and Dodson-Garrett Scores*

Subtest		Pre-test	Post-test	Average Gain	F-test	Significance Level
Language expression	A**	13.8	26.1	12.3	195.18	.001
	S**	7.3	9.4			
	R**	1-30	6-36			
Language comprehension	A	14.5	26.1	11.6	72.01	.001
	S	7.3	9.9			
	R	2-30	0-37			
Motor	A	15.8	26.5	10.7	151.84	.001
	S	7.6	9.1			
	R	2-30	3-36			
Problem solving	A	14.9	26.8	11.9	197.98	.001
	S	7.6	8.6			
	R	3-30	12-37			
Social-personal	A	15.6	28.6	13.0	266.98	.001
	S	7.9	8.4			
	R	2-30	11-37			

*N=45; scores are in months.

**(A) Average
(S) Standard deviation
(R) Range

measures. The immediate question of interest is whether or not the observed improvement was due to project intervention or due to some alternative factor. Two such alternative explanations are a statistical artifact known as regression to the mean and normal maturation.

Statistical regression to the mean (average) can occur whenever there is repeated measurement with a subject population from the extreme end of a distribution. This was clearly possible in the current study since measurements were on a pre-post schedule and since the children measured were from the lower end of the distribution of developmental scores. The regression to the mean effect can typically occur in pre-post designs involving special student populations, and the effect of regression can be statistically significant gains even when no real gains take place.

Since the observed gains were so large in the current study, regression was not likely to have accounted for all or even a major portion of the gains observed. However, an attempt was made to "parcel out" the portion of gains due to regression in order hopefully to discount the regression effect as an alternative explanation for the observed gains.

The Bayley scores were selected for this further analysis since average scores for the total population of children were available (i.e., average scores for the norming population at each age level as reported in the Bayley test manual). In addition, the observed gains for the Bayley were considerably smaller than for the other reported instruments. Thus, the

findings for the Bayley analysis relative to a regression effect could be generalized to the other instruments. Any differences in test reliabilities among the instruments would not be enough to restrict generalization to the other instruments.

The basic procedure used in parcelling out a regression effect was to compute predicted Bayley scores based on the pretest scores, where the prediction equation was:

$$Z_{\text{Predicted}} = r\, Z_{\text{Pretest}} .$$

The z-scores (or standardized scores), were used, rather than raw scores, to simplify the prediction equation. After the predicted z-scores were computed, they were converted back to raw scores. The r in the above equation stands for test reliability. The Bayley test manual provided reliability estimates and population averages for each chronological age level at pretest.

The above procedure permitted regression to affect pretest scores in that predicted scores regressed upward toward the population average. The repeated-measures ANOVA was then calculated using the predicted Bayley score as the pretest score, which decreased the actual pre-post gain.

The results of the above procedure demonstrated that the observed significant improvement was substantially greater than would have been expected from a regression effect. When the effect of regression was parcelled out of Bayley mental subtest scores, the F-test value was still significant at less than the .001 level. Table 32 compares the results using regressed and nonregressed mental pretest scores. (For the

interested reader, the ANOVA using regressed pretest scores gave a mean square of 15036.69 for the pre-post factor and a mean square of 317.58 for the error term.)

Table 32
Comparison of Average Pre-Post Gain
and F-test Value for Observed and
Regressed Bayley Mental Pretest Scores

		Pretest	Posttest	Average Gain	F
Observed pretest	A*	7.7	15.4	7.7	59.86
	S*	4.5	7.5		
	R*	0.1-16.7	0.5-30.0		
Regressed pretest	A	8.3	15.4	7.1	47.35
	S	4.3	7.4		
	R	0.7-17.0	0.5-30.0		

*(A) Average
(S) Standard deviation
(R) Range

While one can easily discount regression to the mean as an explanation for the gains observed in children in Consortium projects, normal growth and maturation might still be considered a viable alternative. One means of investigating the effect of maturation is to consider the number of months gained in developmental age over a set time period. A normal child would presumably make one month's gain in developmental age for each month of chronological age. A handicapped child would be expected to gain less than one month in development for each age month.

In line with the foregoing rationale, the ratio of devel-

opmental age (DA) to chronological age (CA) gives a measure of the rate of development. The ratio of DA to CA should be 1.00 for a normal child whose developmental age matches the chronological age. The ratio of DA to CA would presumably be less than 1.00 for a handicapped child who is developmentally delayed. Comparison of DA/CA at pretest to DA/CA at posttest gives one way of attempting to assess the impact of intervention.

In the case of handicapped or delayed children, the chronological age typically increases at a much faster rate than does developmental age. Thus, if project intervention were effective in ameliorating or reducing developmental delay, one would expect the posttest DA/CA ratio to be hopefully equivalent to the pretest DA/CA, since this would represent a stabilization in the discrepancy between development and chronological maturation. One would expect DA and CA to become more discrepant without intervention, and this would mean that the posttest DA/CA ratio would be less than the pretest ratio. Unfortunately there is no precise means for determining expected changes in DA/CA ratios relative to project impact.

Table 33 presents the DA/CA ratios at pretest and at posttest for 126 children with available test scores. Inspection of Table 33 shows that almost all DA/CA ratios stayed at least about the same or increased from pretest to posttest (a 12-15 month period). Only three ratios showed a negative change of any consequence. Ratios from the Bayley (representing two projects) and from the Bangs and Dodson-Garrett (representing two projects) stayed about the same. Only the motor sub-

test of the Bangs and Dodson-Garrett showed any negative change. Scores from the Koontz (representing one project) showed marked positive change and suggested strong support for the efficacy of project intervention. Scores from the Alpern-Boll (representing one project) showed the most negative change and suggested weaker support for project intervention. Thus, test scores demonstrated support for project intervention in five of the six projects reporting pre-post scores.

The changes in the DA/CA ratios observed in the Koontz scores do not necessarily imply that this one project was superior to other projects in improving developmental progress. The observed ratio changes could have been an artifact in the scaling of the Koontz instrument. The DA/CA ratio procedure has merit, but it is susceptible to certain norm/scaling idiosyncrasies in instruments. Consequently, other Consortium projects might have demonstrated the same positive changes had they used the Koontz instrument. On the other hand, there is no good reason, at this point in time, to discount automatically the positive effects demonstrated by this one project, and so this one project may have demonstrated superior gains. Of course, similar arguments apply to the one project which reported Alpern-Boll scores. These scores contained the most negative changes in DA/CA ratios.

One final consideration is the impact of a regression effect on the foregoing DA/CA ratio analysis. In the case of Bayley mental subtest scores, the regressed pretest average was 8.3 as compared to the observed pretest average of 7.7 (see Table

Table 33

Ratio of Developmental Age to Chronological Age at Pretest and Posttest

Test	Subtest Area	Ratio		
		Pre-test	Post-test	Change
Alpern-Boll (N=20)	Academic	.85	.73	-.12
	Communication	.75	.79	+.04
	Physical	.77	.69	-.08
	Self-help	.86	.84	-.02
	Social	.82	.87	+.05
Bayley (N=27)	Mental	.57	.57	.00
	Motor	.52	.53	+.01
Koontz (N=34)	Receptive language	.66	.78	+.12
	Expressive language	.53	.71	+.18
	Gross motor	.66	.72	+.06
	Fine motor	.73	.87	+.14
	Social	.80	.88	+.08
Bangs and Dodson-Garrett (N=45)	Language expression	.91	.96	+.05
	Language comprehension	.95	.96	+.01
	Motor	1.04	.97	-.07
	Problem solving	.98	.98	.00
	Social-personal	1.03	1.05	+.02

32). This seemingly small difference has considerable impact on the DA/CA ratio analysis reported in Table 33. The Bayley pretest mental DA/CA ratio becomes .61 (as opposed to .57) when the regressed average pretest developmental age is used in lieu of the observed average. The change in DA/CA ratios from pre to post then is -.04, rather than .00 as reported in Table 33. Hence, the effectiveness of project intervention is diminished (as should be) by removal of the portion of gains due to a regression effect.

It was impossible to parcel out regression effects for the other three instruments (Alpern-Boll, Koontz, and Bangs and Dodson-Garrett), since averages were not available for the norming populations. However, ratio changes for all other subtests would also be diminished, but probably not to the same extent, since Bayley scores showed the least pre-post gains. If regression effects were to have been parcelled out of the DA/CA analysis (Table 33), it is possible that only the Koontz scores would have shown a positive change in pre-post DA/CA ratios. The Bayley and Bangs and Dodson-Garrett scores could have shown some loss in the ratio changes (implying loss of stabilization in the discrepancy between development and chronological maturation), and the Alpern-Boll scores may have suggested considerably less efficacy, for project intervention.

Analysis of objective test scores documented statistically significant improvement in the developmental progress of 126 children sampled from six of the nine reporting projects. The sample (N=126) represented about 16 percent of the 806 children (birth through two years) served during the 2¼ years. The

significant improvement was shown to have been greater than that expected solely from a regression to the mean effect.

There was also evidence that observed significant improvement in children was greater than might have been explained by growth and maturation, at least as inferred by maturation rates measured prior to project service. Effects of statistical regression were seen to have diminished but not to have eradicated the above evidence.

Objective test scores provided evidence of the effectiveness of project intervention, but an additional consideration would augment the strength of the test score evidence. This condition is the use of global instruments in the measurement of individualized intervention. Consortium projects attempted to provide individualized instruction to an extremely diverse service population, and one might expect the effects of such intervention to also be individualized. Thus, global measures will likely mask or minimize the individualized effects expected from project intervention. In other words, actual project effectiveness was likely greater than that measured by the Alpern-Boll, Bayley, Koontz, and Bangs and Dodson-Garrett instruments. This does not fault the use of global instruments, but suggests the need for individualized measures as well.

The case study approach was adopted to gain more individualized measures of project impact on children served. Each Consortium project was asked to select four children served in the project and who were aged birth through two years at project entry. Two of the four children should have been those

who made the least progress and two of those who made the most progress. The four children were to have been selected from those who have been in the project 12-15 months, including the summer months.

Project personnel completed a CHILD CASE STUDY report for each of the four sampled children. One of the nine reporting projects provided only two case studies, yielding a total sample of 17 least and 17 most progress children. Table 34 gives a description of the two samples in terms of race, sex, handicap, and age. Charts III and IV present information about handicapping conditions in the two samples as reported by project personnel.

Table 34
Description of the Child Case Study Sample

		Least Progress	Most Progress
Race:	Anglo	13	12
	Black	2	3
	Hispanic	2	2
	Other	0	0
	Total	17	17
Sex:	Female	10	7
	Male	7	10
	Total	17	17
Single Handicap		5	7
Multi-Handicapped		12	10
	Total	17	17
Age*:	Range	14-60	19-47
	Average	31	37
	Standard deviation	5.55	9.5

*To the nearest month.

Chart III

List of Handicaps in Least Progress Sample

Child	Handicaps
1	mental retardation
2	auditory
3	microcephalic-diffuse brain damage; severe and profound delay in all areas
4	multiple birth anomalies - severe and profound delay in all areas; visual impairment
5	mental retardation with visual, auditory, orthopedic, and speech impairments
6	mental retardation with visual, auditory, and speech impairments
7	mentally retarded with cerebral palsy - hearing and visual impairments, brittle health conditions, and seizures
8	mentally retarded with cerebral palsy - hydrocephalic and seizures
9	general developmental delay - orthopedic problems and history of abuse
10	language delay and suspected hearing loss
11	general developmental delay - medical problems, suspected brain damage
12	medical problems with cerebral palsy - high risk due to absence of prenatal care
13	cerebral palsy - spastic quadraplegic
14	severe developmental delay - visual impairment
15	mental retardation - congenital cardiac disorder
16	developmental delay - chromosome disorder, hypotonic motor condition
17	cerebral palsy - spastic quadraplegic, epilepsy

Chart IV

List of Handicaps in Most Progress Sample

Child	Handicap
1	educable mentally retarded
2	educable mentally retarded - developmental delay
3	hearing impaired and health impaired - Treacher Collins syndrome, cleft palate
4	health impaired - myleomeningocele and hydrocephalic/ shunted
5	visual, orthopedic, and speech impaired
6	mentally retarded - speech impaired and other health impaired
7	mentally retarded - visual impairment and other health impairment
8	mentally retarded - history of neglect and possible abuse
9	language/learning delay - cleft palate
10	language/learning delay
11	developmental delay - deaf and organic illness
12	mental retardation - cardiac disorder
13	blind
14	cerebral palsy - spastic diaplegic
15	developmental delay - partial Poland Anomaly with Moebuis syndrome
16	mental retardation
17	microcephalic

Completed case studies varied greatly in detail and in the manner used to report skills, which included statements of observed behaviors and scores on standardized measures. To facilitate communication of data, each developmental area (communication, cognition, self-care, mobility/motor, and socialization) will first be summarized across all children.

(1) Communication

(a) Least progress

At the beginning of the 12-month observation period, the skills of these seventeen children were characterized as non-verbal and non-specific. Vocalizations were limited to grunting or single vowel sounds. Delays from 9 to 18 months were reported. At exit, minimal progress was reported for most children in receptive language skills. Four children had acquired verbal skills of two words to sentences of three to four words.

(b) Most progress

Discriminating vocalizations were initially prevalent among those seventeen children who made the most progress. Verbalization was limited to "jargon" and single words. Progress to the appropriate developmental level was reported for three children, and all children had acquired or begun to exhibit vocabularies in words and/or signs of a few words to sentences of seven to eight words.

(2) Cognition

(a) Least progress

Formal assessment of cognition for these children was very limited. Pre-observation behaviors were reported to be

total lack of awareness or visual tracking to 180°. At exit, for most children, no change was reported while for three children further delay was reported.

(b) Most progress

Only two of these children were described as unaware of enviroment at the beginning of the observation period. Behavior interactions were absent for three children who were described as alert otherwise. At exit, all children were described as alert and involved in interactions. Progress of 6-18 months was reported with normal congnition levels or above reported for five of the children.

(3) Self-care

(a) Least progress

Almost all of these children were initially described as totally dependent, many with feeding problems (gagging, no sucking or rooting). Progress in feeding was reported for these only to the extent of assisted drinking from a cup or bottle, but most were unchanged.

(b) Most progress

At the beginning of the 12-month observation period, three children in this group were described as dependent, while the remaining children actively participated in eating and dressing. For all children, exit skills included self-feeding, progress in toilet-training and dressing or undressing skills. Progress from dependence to independence was reported for one child, while those with initial self-care skills were participating in "household chores".

(4) Mobility/motor

(a) Least progress

Of these children, two were initially reported as being on level and remained so, while ten were described as non-mobile, and progress was reported for six children in the latter group. At exit, two children were walking and two were creeping. The remaining children showed improvement in head control and flexibility.

(b) Most progress

Progress for this group was reported for children of from 4 to 20 months. At entry, two children were described as non-mobile but were walking at the time of exit. Most of the children were sitting at the time of entry and progressed to standing and/or walking with assistance. Fine motor skills were reported as normal for several children.

(5) Socialization

(a) Least progress

At the beginning of the observation period, social skills for these children were reported as being limited to familiar people and consisted of smiles or gesturing. The parent-child relationship was described as good for only two of the seventeen children. Progress was reported for only four children who had shown interaction with strangers or other children.

(b) Most progress

The parent-child relationship for this group was initially described as good. Most of the children progressed from limited socialization with familiar people to interactions with strangers and other children.

Project services provided sampled children were very similar across projects. Examination of services for children described as making the least progress were very similar to those received by children described as making the most progress. In effect, there were apparently no differences of consequence in the kinds or frequency of services received by the two sample groups. Service for both groups included weekly home visits, parent training, and related support services.

When asked what was the explanation for the sampled children making so much or so little progress, the predominant response for so little progress was the extent of handicap involvement. The most frequent response for why children made so much progress was the quality of parent involvement and of project services. Project personnel seemed to indicate that the two key determining factors were the degree to which parents participated in project service and the extent of the child's impairment. The data in Charts III and IV indicate that the extent of impairment was likely greater for the least progress children than for the most progress children, and this supports the explanations for progress given by project personnel.

The foregoing analysis, summarized by developmental area, gives one view of the information reported in the sampled case studies, but analysis by each child presents a more detailed view. The improvements or changes, if any, for each child in each developmental area were summarized, and these are reported in Chart V for least progress children and in Chart VI for the most progress children.

Chart V

Improvement by Post Observation for Least Progress Children

Child	Communication	Cognition	Mobility/motor	Self-care	Socialization
1	Verbalization	Increased activity 1 skill	No change	2 skills	Increased response
2	4 month delay	2 month delay	No change On level	3 skills	Regressed
3	No change	No change	No change	Regressed 6 months	No change
4	No change	3 months	4 months	2 months	No change
5	No change	Increase in awareness	2 skills	No change	No change
6	No change	No change	No change	No change	No change
7	No change	Regressed	No change	No change	No change
8	1 month	Regressed 2 months	No change	No change	2 skills
9	1 skill	Not described	No change	Not described	No change
10	1 word	No change	No change	No change	Improved
11	Verbalizations	No change	Increased flexibility	1 skill	1 skill
12	Verbalizations	2 skills	1 skill	1 skill	1 skill
13	Verbalizations	No change	3 skills	No change	2 skills
14	No change	No change	No change	No change	No change
15	Vocalizes	1 skill	3 skills	No change	1 skill
16	No change	1 skill	4 skills	1 skill	No change
17	2 skills	1 skill	2 skills	No change	No change

Chart VI

Improvement by Post Observation for Most Progress Children

Child	Communication	Cognition	Mobility/motor	Self-care	Socialization
1	34 months	10 months	4 skills	2 skills	4 skills
2	22 months	8 months	Regressed 4 months	No change On level	2 skills
3	14 months	10 months	20 months	16 months	26 months
4	20 months	18 months	12 months	22 months	16 months
5	Verbalizations	3 skills	3 skills	2 skills	3 skills
6	Increased non-verbals	2 skills	2 skills	3 skills	No change
7	19 months	7 months	18 months	3 skills	2 skills
8	14 months	15 months	17 months	2 skills	3 skills
9	Increased Reception Verbalization	2 skills	No change On level	3 skills	Increased interaction
10	Verbalization	No change On level	1 skill	No change On level	3 skills
11	Sign-words	1 skill	4 skills	3 skills	Continued improvement
12	Verbalizations	2 skills	3 skills	1 skill	2 skills
13	3 skills	1 skill	2 skills	2 skills	2 skills
14	2 skills	3 skills	2 skills	2 skills	2 skills
15	10 sign-words	11 months	Increased fine motor	4 skills	2 skills
16	3 skills	3 skills	5 skills	3 skills	Continued Improvement
17	Verbalizations	4 skills	4 skills	4 skills	2 skills

Inspection of Chart V shows that even in the sample of children described as having made the least progress in each reporting project, 13 of the 17 children (75 percent) showed progress, and nine of 17 (53 percent) reportedly showed improvement in at least three of the five developmental areas. Only four of the 17 sampled children (24 percent) showed no progress or deterioration in progress.

The data presented in Chart VI show that all 17 sampled children progressed, and all but four of these progressed in all five developmental areas. Of course, the degree of improvement was generally greater than that reported for the least progress children.

An even more detailed analysis of the case study reports was obtained by summarizing both the pre and post observations reported for each child in each developmental area. Table 35 presents these pre-post summaries for the least progress sample, and Table 36 presents summaries for the most progress sample. Inspection of Tables 35 and 36 indicates the kinds of improvements made by children sampled.

In the least progress sample, at least eight children developed more purposeful communication skills, which ranged from directed gesturing and vocalization to acquisition of a few words. Six of the seventeen children increased their awareness level, and mobility/motor improvement of seven children included such skills as learning head control, rolling over, and sitting upright. In the area of self-care, five children learned some degree of self-feeding, where there

Table 35

Pre-Post Changes Observed

in Least Progress Children

		Child 1	Child 2	Child 3
Birth Date		9-72	9-74	9-74
Communication	Pre	No vocalization	On level limited vocalization	6 months
	Post	Names objects 3-4 word sentences comprehends	3-4 month delay follows directions names pictures	6 months
Cognition	Pre	No activity Passive	on level pulls toy	12 months
	Post	Simple Puzzles Some activity	2 month delay builds tower	12 months
Mobility/ motor	Pre	Walks	on level	4 months
	Post	Walks	on level	4 months
Self-care	Pre	Poor	Fed by mother	10 months
	Post	Drinks - cup Wash/dry hands	Feeds self Helps dressing Toilet trained	4 months
Socialization	Pre	Withdrawn No interaction	Gives affection smiles, interacts with children	6 months
	Post	Some smiling and laughing	Will not share tantrums shows pity and shame	6 months

Table 35 cont.

		Child 4	Child 5	Child 6
Birth Date		12-75	6-75	9-75
Communication	Pre	6 months	None	Near normal
	Post	6 months	None	No verbal skills
Cognition	Pre	6 months	Unaware	Alert
	Post	9 months	Slightly aware	No change
Mobility/ motor	Pre	4 months	Non-mobile No head control Inactive	Head lag Non-mobile
	Post	8 months	Fair head control Strength increased	No change
Self-care	Pre	6 months	Dependent	Dependent
	Post	8 months	No change	No change
Socialization	Pre	6 months	None	Good parent/ child relationship Near normal
	Post	6 months	None	No change

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Table 35 cont.

		Child 7	Child 8	Child 9
Birth Date		6-75	11-73	7-76
Communication	Pre	1½ months vocalizations only	6½ months vocalization	Nonspecific
	Post	No change	7½ months 2 words	Communicates with family
Cognition	Pre	Visual tracking Holding object	10 months reaching, grasping	Not described
	Post	Regressed No tracking	8 months	Not described
Mobility/ motor	Pre	1½ months lifts head, hand to mouth	10 months sit and walk with aid	Non-mobile
	Post	No change	10 months roll ball, walk with less aid	No change
Self-care	Pre	Sucking	Remove shoes and socks Hold cup with aid	Not described
	Post	No change	No change	Not described
Socialization	Pre	Vocalized to Father, Mother	Smiles, vocalizes Reaches for familiar person	Friendly shy
	Post	No change	Clap hands Accepts parents' absence	No change

Table 35 cont.

		Child 10	Child 11	Child 12
Birth Date		3-76	3-75	1-74
Communication	Pre	Grunts	Crys, laughs, grunts	Nonspecific
	Post	Mama	Some words Poor quality speech	Imitates speech sounds Mama, Dada
Cognition	Pre	Limited awareness	Below age level	Visual tracking 180°
	Post	No change	No change	Raking motion Passes cube to hand
Mobility/ motor	Pre	Age-level	Poor Below Age level	Prone-head up 45°
	Post	No change	Flexible Below Age level	Rolls over
Self-care	Pre	Age-level	None	None
	Post	No change	Feeds self	Feeds self cracker
Socialization	Pre	Poor Parent/child Relationship Strained inter-action w/siblings	Poor Parent/child relationship	Smiles
	Post	Improved relationship good interactions	Very poor Plays interactive games	Plays peek-a-boo

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Table 35 cont.

		Child 13	Child 14	Child 15
Birth Date		8-75	9-75	6-75
Communication	Pre	Crying and grunting	Vocalizes Responds to bell	Below 2 months
	Post	Some words some imitative speech, less crying	No change	Squeals, coos, smiles, laughs, vocalizes
Cognition	Pre	Not assessed	Visual tracking 180o Holds objects	None
	Post	Below age level	No change	Responds to voices
Mobility/ motor	Pre	Scoots, grasps object retrieves toy	Follows to midline Grasps rattle	None
	Post	Creeps Pulls to standing Prone to sitting	No change	Raises head sits w/support some direction-ality
Self-care	Pre	None	None	None
	Post	No change	None	No change
Socialization	Pre	No eye contact Resists handling	Regards face smiles	Smiles
	Post	More eye contact Sought cuddling	No change	Cries at dis-pleasure

Table 35 cont.

		Child 16	Child 17
Birth Date		12-73	5-76
Communication	Pre	Vocalized Quieted to sound	Verbal reflex
	Post	No change	Vocalizes emotional state tracks visually
Cognition	Pre	Hands to midline foot to mouth	1-5 months Hand watching alternates
	Post	Anticipates	Anticipates
Mobility/ motor	Pre	Primitive reflexes Grasped rattle	Hand swiping rolls to side
	Post	Rolls over, sits, crawls objects hand to hand	Assists pulled to sitting, head erect
Self-care	Pre	None	Holds biscuit and bites
	Post	Holds bottle	No change
Socialization	Pre	Does not like interactions	Little interaction
	Post	No change	No change

Table 36

Pre-Post Changes Observed

in Most Progress Children

		Child 1	Child 2	Child 3
Birth Date		3-74	7-74	3-74
Communication	Pre	8 month delay discriminates my-yours	16 month delay in expression 2 months above in comprehension	18 months
	Post	1 month delay asks questions using 4-5 word phrases	On level Poor speech quality	32 months
Cognition	Pre	10 month delay builds towers	6 month delay builds towers	20 months
	Post	On level strings beads, folds paper, simple puzzles	2 months above level puzzles, matches colors	30 months
Mobility/ motor	Pre	kicks ball walks turn pages in sweep	2 months above level	26 months
	Post	Alternates feet upstairs Jumps 1 step Turns pages 1 by 1	2 months below level; thumb/ finger grasp alternate feet	46 months
Self-care	Pre	Helps to dress-undress Dry hands; toilet trained; uses spoon	On level	26 months
	Post	Feeds self washes hands	On level	42 months
Socialization	Pre	Separates well good parent/child relationship	Separates well shy, little inter-action	24 months
	Post	Shares books Listen to stories Imitates child in play; offer object	Offers objects Refuses requests Dramatizes adult activities	50 months

Table 36 cont.

		Child 4	Child 5	Child 6
Birth Date		12-75	4-74	4-74
Communication	Pre	6 months	Differential cry apathetic	Grunts, points Mama, Dada, Bye Bye
	Post	26 months	Few words Improved reception	More non-verbal than verbal
Cognition	Pre	6 months	Aware No interaction	Aware
	Post	24 months	Explores, responds normal curiosity	Curious, explores actively
Mobility/ motor	Pre	6 months	Head lag when sitting Non-mobile inactive	Sits unsteadily scoots
	Post	18 months	Pulls to standing walks around furniture; increased strength	Walks age-level
Self-care	Pre	4 months	Dependent	Finger foods
	Post	26 months	Spoon, progression toilet training	Dresses Feeds self Toilet trained
Socialization	Pre	6 months	Apathetic	Good parent/child interaction non-verbal
	Post	22 months	Smiles, eye contact gestures, hello and goodbye	No change

Table 36 cont.

		Child 7	Child 8	Child 9
Birth Date		4-74	7-74	12-74
Communication	Pre	4 months	9 months	Mama, Dada 50 % reception gestures
	Post	23 months two-word sentences identifies objects	23 months	3-4 word sentences 90 % reception
Cognition	Pre	11 months looks at pictures, rings bell	4 months	Not alert
	Post	20 months discriminates objects	19 months	Follows directions Simple puzzles
Mobility/ motor	Pre	10 months sits alone, walks with aid	5 months	Age level
	Post	30 months walking up and down steps	23 months	Age level
Self-care	Pre	None	None	Undresses Spoon
	Post	Spoon, cup remove clothing toilet training	Cup and Spoon Takes off clothes	Dresses Dries hands Brushes hair
Socialization	Pre	Reaches for familiar; smiles responds to name	Smiles withdrawn	Little interaction
	Post	Shares objects Imitates simple tasks	Repeats action for attention; shares, manipulative games outgoing	Some interaction more aggression

Table 36 cont.

		Child 10	Child 11	Child 12
Birth Date		10-73	12-75	8-74
Communication	Pre	Non-verbal	Cries gestures	Cries, fusses
	Post	7-8 word sentences understands	20 words in sign 5 two-word signs	3 word sentences
Cognition	Pre	Follows directions shown to her	Below age level	Very poor unaware responds to family
	Post	Follows oral directions 10-12 piece puzzle	Plays imitation games	Understands verbal instructions plays games
Mobility/ motor	Pre	Walks, throws, kicks a ball walks up and down stairs; pigeon toed	Scoots normal fine motor skills	Rolls
	Post	Pigeon toes corrected Jumps in place awkward	Walks, runs, jumps, tiptoes	Walks, stacks blocks, imitative play
Self-care	Pre	Onlevel	None	None
	Post	On level helps with tasks at home	Feeds, toilet trained, dresses	Feeds self
Socialization	Pre	Little interaction	Good Parent attentive	Aware of parents
	Post	Initiates conversation, plays more, outgoing agressive	Very good interacts w/children Independent	Interacts w/others Mother helps child

Table 36 cont.

		Child 13	Child 14	Child 15
Birth Date		9-75	7-75	8-75
Communication	Pre	Imitates speech sounds Mama, Dada, non-specific	Jargon and true words understands verb forms	No words 13 months
	Post	Uses plurals First and last name follows directions	Regularly relates experiences, uses plurals	10 signs
Cognition	Pre	Reaches for toy	Puts object in container Imitates invisible gestures	11.6 months
	Post	Plays interactive games	Scribbles 4 cube towers dumps object from bottle	23 months
Mobility/ motor	Pre	Pulls to stand gets to sitting position	Pulls to sit Bears some weight on legs	Walks, stoop lacked fine motor 27 months
	Post	Throws ball stands on one foot	Pulls to stand throws ball	Places objects in cup 27 months stacks 6 blocks
Self-care	Pre	Feeds self cracker	Feeds self indicates toilet needs	Feeds cracker
	Post	Uses toilet washes, dries hands	Takes off clothes drinks from glass	Feeds self Puts on shoes-sock dresses, undresses
Socialization	Pre	Shy peck-a-boo	Indicates wants to parents plays ball	Shy, little interaction
	Post	Separates well plays interactive games	Plays interactive games separates well	Cooperative play Parallel play

Table 36 cont.

		Child 16	Child 17
Birth Date		2-76	12-75
Communication	Pre	Single vowel Localized sounds	Crying and vocalizations
	Post	Babbling, names of people imitates words	10 words 1 word sentence Imitates sounds of animals
Cognition	Pre	Holding, shaking, grasping	Visually attends Hold and reach for toys shakes rattle
	Post	Retrieves, hidden objects Pulls strings responds to mirror	Finds hidden object stacks 6 blocks pulls strings
Mobility/ motor	Pre	Nervous system immature no protective extension	Sits with support non-mobile
	Post	Walks, pulls to stand, formboard scribble, rings on spindle	Walks several steps sits steady climbs
Self-care	Pre	None	Finger foods
	Post	Spoon, cup removes socks stays dry at night	Spoon, cup washes hands and face; undresses sits on toilet
Socialization	Pre	Good relations with siblings and parents	Afraid of stranger Good parent child relationship
	Post	Continued good relations	Plays with children interacts with strangers

were previously no self-feeding skills. Changes in socialization skills for eight of the least progress children included such things as learning to smile and laugh, clapping hands, and playing peek-a-boo.

Improvements made by the most progress sample (Table 36) were generally of the same kind but of a higher degree and greater frequency. As noted previously, almost all children improved in all areas. In the communication area, most children had developed limited vocabularies, and several began to use simple sentences. Cognitive improvements included learning to follow verbal directions, playing varied games, retrieving hidden objects, and exploring. Improvements in the area of mobility/motor involved walking, running, standing, sitting, jumping, throwing, scribbling, building block towers, and thumb-finger grasping. Improvements in self-care primarily included self-feeding skills, toileting, and dressing. Improved socialization skills in the most progress sample were such skills as sharing objects, smiling, gesturing, playing interactive games, and basic interactive conversation.

The above data begin to give some idea of the changes made by children during the observation period. One can more easily see the lack of measurement detail provided by the global measures (Alpern-Boll, Bayley, Koontz, and Bangs and Dodson-Garrett) discussed earlier. However, even the best summary analysis of case study data seems inadequate. To give an even more individualized perspective on the case study analyses, the following complete case study "write up" was written for

child #1 in the least progress group (see Chart V and Table 35). The "write up" was based on the data reported in the case study report for child #1.

Child #1 (least progress sample)

At time of pre observation, this female five-year old child had no vocalizations, but was able to follow a few simple directions. The child's cognitive state was described as being passive with no attempt to participate in activities. The child was able to walk and presumably perform other basic gross motor behaviors, and the child had poor self-care and grooming habits. The socialization skills were minimal, and the child was very withdrawn. There was no smiling or laughing, and no display of affectionate behavior.

At the time of post observation, the child had begun to use three to four word sentences and to name objects. The child was able to comprehend most of what was said. Cognitive capabilities appeared stronger in that the child involved herself in some activities, including working simple puzzles. The child had started washing and drying her hands and was drinking from a cup unassisted. However, eating habits were still generally poor. Motor skills of the child remained basically unchanged, but there was improvement in the area of socialization. The child exhibited some smiling and laughing, but still withdrew in the presence of selected adults.

The following "write up" is based on the case report for Child #5 in the least progress sample (see Table 35). Child #5 apparently made the least progress of children in the least sample (see Chart V), excluding those who made no progress.

Child #5 (least progress sample)

At the time of pre observation, this male child was about 2 years, 4 months of age. He had no communication skills, either verbal or nonverbal, and no differential crying capability. His handicapping conditions included visual, auditory, orthopedic, speech, and mental retardation. The child had no apparent awareness of his immediate environment nor demonstrable awareness of his parents. He was dependent in all aspects of self-care and was very inactive in the motor domain. There was weak but infrequent movement of arms and legs, and there was no head control. Socialization skills were totally absent with no response to persons or vocal stimuli.

At the time of post observation, the child's verbal communication was unchanged, and there was still no evidence of differential crying. There was evidence of some slight increase in awareness of the immediate environment in terms of lights, moving objects, and vocal stimuli. Self-care skills

remained unchanged, but there was some increase in head control and increased strength in the child's arms and legs. However, movements of limbs appeared to be random and unrelated to activity. Socialization skills remained unchanged with the exception of some response to vocal stimuli.

The above two "write ups" of two selected case study reports demonstrate more clearly perhaps the extent of involvement in selected children served in the Consortium projects and the degree of progress made. The case study reports describe more thoroughly the developmental progress made by children, but the most significant finding may be the extent of progress observed for even those children described to have made the least progress during project intervention. Recall that only 24 percent of least progress sample did not show evidence of any progress.

The child case study data supported the contention that children progressed during project intervention. (In fact, some may consider the support more convincing than that of the objective test scores previously discussed.) The next question of interest is to what extent is project intervention responsible for the observed progress in children served. An adequate reply to this question is well beyond the scope of the current study, since it would be necessary to secure the judgments of child development experts. These professionals would have to review each case thoroughly and then form an opinion about the probable explanations for observed progress.

At this point in time, the reader can judge the effect of project intervention in accordance with his or her own expertise. Referral to Charts III and IV, which contain handicap information for children reported in the case studies may be

helpful. In some cases, the credibility of project intervention may be intuitively obvious even to a layman, in other cases human maturation, or some combination of events or factors, may be the more believable explanation for the observed progress.

Family impact. To gather information about the impact of Consortium projects on the total family, projects were asked to complete the FAMILY CASE STUDY document. The families selected were those for whom the projects had had the most positive impact. Each project was asked to complete case studies for two families, and these were completed by eight of the nine reporting projects. Table 37 gives descriptive data for the sample of 16 families.

Table 37
Family Sample Descriptions

	Mean	Median	Standard deviation	Range
Estimated age of parents (in years)	31	30	5.55	22-47
Number of children	2	2	1.44	2-5
Age of handicapped child (in months)	33	35	5.74	20-48
Months enrolled in project	18	18	4.19	6-30

As noted in Table 37, most of the sampled families had two children, and the typical age of the handicapped child was slightly under three years. Most handicapped children had been enrolled in their respective project about 1½ years. The majority of sampled families (N = 11) consisted of two-parent homes. There were single parent homes in four cases, and one

family was an extended family.

Four questions were asked about project impact to guide and organize the collected responses. The questions related to (1) changes in family stability, (2) family acceptance or interaction with the handicapped child, (3) other changes, and (4) parental involvement with the project. The following gives a summary of responses for each of the above areas.

(1) Changes in family stability

For the majority of the 16 families included in this study, the relief of stress and reduction of reclusive behavior relating to the handicapped child were the most common change during the period after involvement in the project. Significant changes were noted in the economic situation of two families. In the first, the mother went to vocational school, obtained a job and was better able to provide for her child. A rural family suffered an economic setback when they moved into the city to be able to take advantage of special services needed by their child. In addition, the emotional stability has deteriorated for this family. Another family experienced a divorce and the mother's remarriage. One family divided when the two younger children were placed in foster homes, but has now been reunited. For two families the relief of stress was most dramatic, evidenced by cessation of physical abuse in the family.

(2) Changes in family acceptance and interaction

For these project families behavioral changes occured in three general ways: from passive to active participation in in child's therapy, more openly affectionate involvement and

interaction with the child outside therapy situation, and development of more realistic expectations for child. Reduction in abuse and in behavior mis-management for four families was said to have resulted from increased awareness of child's abilities and limitations. Families entered into more activities such as recreational outings, attendance at church, and dining out. Increased knowledge of child development was evidenced by transferring of instructional techniques to many home activities and increased interactions with the professionals providing services to the child.

(3) Other changes

For most families a new assertiveness and improved self-concept were reported for involved parents. Shy, retiring parents were actively involved in seeking support for the project, talking to parents of handicapped children and making referrals. Community resources, educational methods, and techniques were researched and marital and genetic counseling were sought. In several cases, there were observed positive changes in the behaviors of other children in the families. One mother's headaches went away; children's school attendance improved; new friends were made. For one family change meant placement of the handicapped child in a state school.

(4) Parent involvement with the project

Parent involvement for sampled families ranged from serving in a volunteer program with other children to no involvement other than occasionally attending therapy sessions and making suggestions for the home program. The parents of one child served on the project advisory board, while two families

participated in the making of video tapes for training and dissemination purposes. Almost all of the families were involved in at least one of the following: parent meetings, family activities (swimming, parties), counseling, parent training, and study groups.

The above information presents family case study data summarized across sampled families within each of the four question areas. Another way to analyze the data is across the four question areas for each sampled family, which would lead to a summary of case study data for each family. The following presents a summary for each family:

Family #1: During the 16 months the child was in the project, the mother and father in this middle class family progressed from relative nonacceptance to acceptance of the child. The father began taking the child with him on days off from work, and the mother began to work with the child in earnest. The mother began to exhibit pride in the child's progress and became a vocal supporter of the project. The mother was also able to discuss the child's problems and future expectations.

Family #2: Both parents initially denied the developmental delay in their child, and the father was very protective of the child. Several months after initial project contact, the parents accepted project services. The parents began to admit the delays in their child, and the mother became an active participant in therapy sessions for the child over the past 14 months. The child is now attending the school district's early childhood program, and the mother is able to work

cooperatively with the child's teacher in resolving problems.

Family #3: In this extended family with four children, the mother initially denied that the handicapped child had any problems. During the 18 months in the project, the family's awareness of child development increased, and the mother also became more secure in her interactions with school personnel relative to the other three children. The family also made greater use of the public health services available in their community.

Family #4: The handicapped child in this single-parent family with five children was served for 20 months in the project. At entry to the project, the parents had recently separated, and there was evidence of the mother's inability to cope, financial breakdown and poor parent-child interaction. The mother increased her parenting skills, began to interact with community agencies, and developed more personal resourcefulness. In addition to having increased awareness of normal developmental patterns, the mother also refers other families in need. There also was improvement in school attendance of one of the other children.

Family #5: During the 24 months this only child was in the project, both parents greatly increased their acceptance of the child and the handicap from total unacceptance to nearly normal acceptance. The parent-child interaction has improved accordingly. Initially, the mother was emotionally depressed and withdrew almost totally from social contact, but now the mother participates in some of the social activities sponsored

by the project. In spite of great tension surrounding the child's handicap, the parents have made a concerted effort to deal with the problems.

Family #6: The parents in this family were separated, and they eventually divorced. At time of entry to the project, the mother exhibited a sense of hopelessness and worthlessness and showed minimal to no skills in parenting the two children. The 13 months' project intervention to help the younger child also helped the older child, and the mother's interaction with both children increased as her parenting skills increased. The mother regularly attended and participated in parent involvement activities, and formed several friendships. She also was able to provide constructive encouragement to the handicapped child.

Family #7: This family consists of only the mother and a single child, who has been in the project for the past 28 months. Since that time, the mother's emotional stability has increased, and she is making fewer residence changes. She seems to have come to understand that she is responsible for her success and failure and seems to have accepted her child's handicap. The child had been initially abused. The mother has learned some child development knowledge and now understands the nutritional needs of her child. The mother is now able to seek assistance for problems before they become crises. She also has brought other parents to the project and assists in her child's classroom.

Family #8: The parents of this child were able to come to

better accept their child's handicap during the 14 months in the project. The family was actively involved in the child's therapy program, and the family has become more open in discussing their child's handicap with other people.

Family #9: Both parents in this family initially showed acceptance of the handicapped child, but during the seven months in the project, they have learned special skills and techniques relating to the child's handicap. Additionally, the parents have become very active supporters of the project over the past seven months and now serve on the project advisory board.

Family #10: The parents of this only child have gone through the entire range from shock and rejection to acceptance of the child's handicap. After 10 months in the project, the parents now strive to support and encourage the child's development and are considering adopting a second child.

Family #11: The added burden of the child's handicap places an extreme financial drain on the parents in this family. The parents initially held unrealistic expectations for this child but gradually came to accept the handicap and eventual placement for the child in a state institution. During this time project counseling helped the parents to avoid divorce and to maintain the family unit.

Family #12: During the 24 months this family of two parents and four children was in the project, the parents progressed

from being shy and reserved to being outgoing with others. Both parents work daily with the handicapped child in providing services, and both strive to improve their knowledge and expertise in this area. The mother reports having become more self-confident and now assists other parents of handicapped children with babysitting when needed.

Family #13: At the time of project entry, both parents had become semi-reclusive and emotionally depressed as a result of their child's handicap. The mother attended only to the necessary biological needs of the handicapped child. During the 24 months of project service, both parents came to live a normal social life with their friends and relatives, and they can openly discuss their child's handicap. The parents also developed selected management skills which improved the behavior of the older sibling. Both parents participate actively in the parent involvement activities, refer others to the project, and provide a resource to other parents of handicapped children.

Family #14: During the six months the mother of this only child was involved with the project, she divorced and remarried. The mother also became more positive in her interaction with the child and made better use of toys for the child. The mother's disposition also changed from hopelessness to optimistic planning, and she took part in project activities.

Family #15: In the 20 months this handicapped child was in the project, the parents improved their expectations for the

child, and the father became more supportive of the mother. The father also became more accepting of and cooperative with project staff. The parents began to socialize more and to take both children out to eat. The family also improved their housekeeping habits, and the older child behaved better.

Family #16: When this child entered the project, the mother was unmarried and lived with her parents. She seemed defeated and had apparently resigned herself to a dull life of caring for a handicapped child. During the 23 months in the project, the parent-child relationship improved as the child began to improve. Instead of a worry, the child became a source of pride. The mother completed vocational training, secured a job, and rented an apartment, where she established a new home. With the child's improvement and the mother's emotional changes, the mother began to see the child's natural father, and the couple is now living a normal home life.

The above family case studies describe a common trend where parents initially had difficulty accepting the handicapped child, and this difficulty many times led to marital tension and family withdrawal from the usual interactions of the social community. Projects reportedly assisted parents during the adjustment stages, and parents improved their acceptance and adjustment regarding the child.

The parenting skills of parents typically improved while the family was involved in the project, and parents received greater self confidence and became more involved in rearing the child. Parents also became more active socially especially with other parents. Most parents came to participate in project

parent involvement activities, and the sharing among parents apparently resulted in increased emotional support. In several cases, siblings of the handicapped child benefited from project involvement, and all families appeared to be strengthened during the project experience. In several cases, the families provided leadership and services to other families.

The design of the study unfortunately did not permit definitive conclusions about the probable cause of the changes observed in sampled family case studies. One must decide what was the probability of the observed changes taking place without project intervention. As in the child case studies, in some families the positive impact of the project appeared to be obvious, and in other cases the cause of change was more difficult to identify.

The family case study data support the finding of greater sharing and interaction among parents of handicapped children, and this would presumably not have taken place without project intervention. One might also easily conjecture that the observed improvements in parenting skills would not have been so pronounced without project intervention. The extent to which intervention assisted parents in the process of adjusting to a handicapped child was difficult to assess, since many of the adjustment patterns reported were normal and to have been expected. Presumably, the additional support provided by projects was beneficial during crisis periods and may have eased or speeded up the adjustment process for selected parents.

Parent reaction. The parents who responded to the PARENT REACTION QUESTIONNAIRE were selected from the population of parents whose children, aged zero through two years at the time of entry into the project, were served for at least six months in the project. Each project was instructed to randomly select four parents from the specified population for response to the questionnaire. The mother, father, guardian or primary caretaker was considered the parent. The child could have been served by the project at any prior time during the project's existence.

In the event a sampled parent was too difficult or otherwise impossible to contact, project personnel were instructed to randomly select another parent(s) to replace the one(s) initially selected. A total of thirty-two parents were selected by nine projects to respond to the questionnaire; two projects provided two, rather than four, questionnaires.

Of sampled parents, approximately 86 percent (N = 26) were mothers, 7 percent (N = 2) were grandmothers, and another 7 percent were the guardian of the child. Two of the respondents did not indicate their relationship to the child.

The suggested method for projects to obtain responses to the questionnaire was through telephone interview. Direct personal contact was also an acceptable means of obtaining the data. Over one-half of the parents surveyed (approximately 53 percent, N = 16) were contacted via personal interview. Forty percent (N = 12) were contacted via telephone interview, while data for two of the parents were obtained from data which were reportedly already in project records. The means by which

the data were collected was not indicated by two reporting projects. All projects were encouraged to resist the possible temptation to randomly sample from just those parents for whom the project already had reaction data or from those parents whose reaction was known to be positive.

The data in Table 38 show the distribution of responses obtained to five of the six questionnaire items. In response to the first item, all of the parents who responded indicated that they thought the particular project serving their child had helped the child's development. Approximately 94 percent (N = 30) of the parents indicated that the project had "definitely" helped their child's development. Some of the ways in which parents indicated their child's development had been affected (helped) by the project included areas relative to the child's motor development (four), general overall development (ten), speech and language development (eight), and by stimulating their child's emotional development (two). Parents also indicated that the project helped to stimulate their child's learning and interest (eight) as well as to help the parent(s) themselves to understand their children's individual needs (three). The projects were also said to have been helpful in terms of providing transportation when needed (one) and in terms of teaching the child responsibility (one). One parent indicated that the project had helped their child's development in virtually all areas.

Data obtained in response to item 2 indicate that approximately 91 percent (N = 29) of the parents thought the project

Table 38

Parent Reaction Questionnaire Results

Item description		Response Choice: definitely yes	probably yes	possibly	no
1. Project helped your child's development?	%	93.8	6.2	0.0	0.0
	N	30	2	0	0
2. Project has been helpful to your family?	%	65.6	25.0	9.4	0.0
	N	21	8	3	0
3. Recommend project for others with handicapped children?	%	96.9	3.1	0.0	0.0
	N	31	1	0	0
4. Project good investment for taxpayers?	%	93.8	6.2	0.0	0.0
	N	30	2	0	0
5. Encourage others to vote for legislation supporting similar projects?	%	90.6	9.4	0.0	0.0
	N	29	3	0	0

had been helpful to their family as a whole. Some of the ways in which the parents indicated the project had helped their families included the stimulation of learning and interest (three), by providing financial support (one), by providing speech therapy for their child (one), and by providing transportation to keep doctor appointments (one). Parents also indicated that their families had been helped in terms of stimulating family support of one another (three) and in helping the family to understand and cope with their problems (thirteen).

Further inspection of the data shows that the overwhelming majority of the parents surveyed (97 percent) indicated that they would "definitely" recommend the project to others

with handicapped children in need of services. The one remaining parent indicated that they would "probably" recommend the project to others. Approximately 94 percent (N = 30) of the parents again indicated that they "definitely" felt that projects such as those serving their children were a good investment for the taxpayer, with the remaining six percent (N = 2) indicating that they felt these projects were "probably" a good investment for the taxpayer.

Nearly 91 percent (N = 29) of the parents further indicated that they would "definitely" encourage others to vote for state legislation that would support projects such as those serving their children. The remaining nine percent indicated that they would "probably" vote for state legislation supporting similar projects.

The final item on the questionnaire asked parents to indicate what they liked best about the project serving their children. Those aspects of projects cited most often by parents included the service their children were receiving and just knowing that their children were getting the help they needed and at an early age (thirteen). Parents also cited the project staff in terms of their cooperation, concern, knowledge and training (thirteen). The survey further indicated that they liked their project because it stimulated parent awareness and education (seven), because of the federal funding and financial help they received (five), and also because the project gave them an opportunity to share their experiences and concerns with other families with handicapped children (four). Parents also indicated that they liked the fact that home

visits were included in the program (four). Two parents cited the screening and evaluation phases of the project and the therapy for their children. Parents further indicated that they liked the family and emotional support the project provided (two) as well as the availability of the lending library (one).

Analysis of parent reaction data shows that parents generally held a strong positive attitude or reaction toward the project serving their child. On the average, 88 percent of the parents responded "definitely yes" to all items on the questionnaire. Virtually all parents indicated that they would definitely recommend the project for others with handicapped children and that the project was helpful to their child's development. Parents further indicated such projects were a good investment for the taxpayer.

The results of the parent survey certainly support the contention that project intervention was effective in improving children's developmental progress and in having a positive impact on the families of handicapped children. One should consider the results reported in Table 38 (items one and two) when interpreting the outcomes of analysis regarding children's progress and family impact. The above parent reaction data further substantiates project effectiveness in that parents readily attributed improvements in their child's development and in their family to project intervention.

One final measure of parent reaction to Consortium projects was reported earlier in the section of this document entitled Parent Involvement, under Project Descriptions. The

reported number of parents (N = 132, Chart II) who provided service to Consortium projects, and the total hours of service provided (N = 20,226, Chart II) give an indirect, but fairly convincing measure of a strong positive reaction by at least part of the parent population. These data may be more convincing, when one considers the number of working parents and routine demands placed on people's "leisure" time.

Summary and Conclusions

The Triple "T" Consortium (Teaching Texas Tots) decided at the July, 1977 meeting to participate in a study to evaluate the impact and effectiveness of the Consortium. The Texas Education Agency provided support for the evaluation study, and an external research agent was engaged to design and implement the study in cooperation with Consortium projects.

The basic design of the study required Consortium projects to report selected information in accordance with standard instructions and data collection documents developed especially for the study. Project personnel were asked in November, 1977 to report descriptive information about their project in terms of service model, population served, service area, staff profiles, costs, and parent involvement. In addition, projects reported information about project effectiveness in terms of pre-post objective test scores and case study reports of sampled children, case study reports of selected families, and parent reaction questionnaire results.

A sample of nine of the 14 Consortium projects cooperated in returning the data requested in the study (a return rate of 64 percent). The nine projects participating in the data collection were considered representative of Consortium projects in general. Pre-post objective test scores were available for a sample of 126 children from six of the nine reporting projects. All projects provided two to four case studies of selected children resulting in a sample of 34 case studies,

and eight projects each provided two case studies of families served in Consortium projects.

Children were selected in the test score sample as a function of data availability, and the children's case study sample was selected within each project such that one-half the sample (N = 17) was children described as having made the most progress, and one-half was described as having made the least progress. Sampled families were selected for having shown the most positive project impact.

Each project provided two-four parents for inclusion in the parent reaction sample. Projects were instructed to select these parents randomly.

Consortium projects received detailed instructions and documents for recording the requested information (see Appendix). Aside from the data collection specifications, the research agent made no attempt to moniter the reliability or validity of reported data. However, there was no apparent motivation for reporting erroneous data, since the study investigated many Consortium projects rather than any given project and since the Consortium was the primary impetus for initiation of the study.

The following lists the major results and findings resulting from the analyses of reported data. The reader is encouraged to study the main text of the report to gain a complete understanding of these findings.

Project Descriptions

Service models.

1. Most Consortium projects used a combination home-center service delivery model in which instruction was available at a central project site as well as in the child's home. All but one project provided instruction in the child's home, and only two projects provided instruction exclusively in the home. All but one project had provided service for at least about 20 months through September, 1977.
2. Consortium projects were located in both urban and rural areas with the general population ranging from 14,000 to 950,000 people. Geographical service areas ranged 87.5 square miles to 12,000 square miles.
3. The average age of children served in the projects ranged from about 14 to 28 months, with the average being about 21 months.
4. Consortium projects were housed in a wide variety of physical facilities.
5. Project staffs included a total of 82 full-time and 16 part-time personnel. The typical full-time project staff consisted of three teachers, one paraprofessional, one secretary/clerk, one support professional, and one manager.
6. Five of the reporting nine projects reported 16 part-time staff personnel, and only four projects reported full or part-time staff whose services were contributed to projects.
7. The most highly represented educational level among project

staff was the bachelor degree, followed almost equally by the master degree and high school diploma.

8. On the average, teachers in Consortium projects had about 4½ years' teaching experience and about 3 years in special education. Paraprofessionals generally had 3 years' educational experience and 2 years' experience in special education.

Children served.

9. Projects had served a cumulative total of 806 children in the birth through two population and 118 children in the three-year and older group (through September, 1977).
10. In the birth through two population, the cumulative number of children served per project ranged from 17 to 238 children. About 61 percent of the children served were male, and about 25 percent were of Mexican-American ethnicity and about 20 percent of Black ethnicity. About 54 percent were of Anglo ethnicity.
11. In the three-year and older population, the cumulative number of children served per project ranged from 9 to 67 children. About 63 percent of the children served were male, and about 38 percent were of Black ethnicity and about 9 percent of Mexican-American ethnicity. About 53 percent were of Anglo ethnicity.
12. On the overall average, birth through two children had been enrolled about 12 months in Consortium projects, and the overall range was one to 44 months. The three-year and older children had been enrolled about 8 months on the over-

all average, and the overall range was one to 24 months.

13. In the birth through two population, about 80 percent of all primary handicapping conditions was accounted for by mental retardation, developmental delay, orthopedic problems, and other health impairments. A similar pattern was evident in the three-year and older population, with greater incidence of language as a primary handicap. About 40 percent of all children, regardless of age, were reported as having multiple handicaps. Emotional disturbance was cited as the least frequent handicap.

Parent involvement.

11. Consortium projects provided a total of almost 2,000 hours of activities conducted for parents. These generally included various types of parent training activities, group and individual counseling, workshops, and social activities. A total of 547 parents had participated in project activities (through September, 1977).

12. A total of 132 parents had provided some type of service to Consortium projects, and these included teaching their own child or other children, making instructional materials, hosting activities, mailing and telephoning, maintaining special interest groups, visiting with other parents, assisting in child referral and screening, lobbying efforts, and other activities.

13. In five of the nine reporting projects, parents had provided a total of 16,914 hours of instruction to children, and parents had provided 3,307 hours of non-instructional

service to these projects.

Cost reports.

14. The average total yearly budget cost for reporting projects for 1975-76 was $109,311; for 1976-77 it was $147,916; for 1977-78 it was $134,611.

15. Across the three-year period, the overall percent of total budget allocated by projects for service delivery was seen to increase, and the percents for model development and staff training decreased. This was as expected for developmental projects.

16. For the 1975-76 fiscal year, overall, 57 percent of the total budget was assigned for service delivery, 19 percent for model development, 13 percent for other expenses, and 11 percent for staff development. In the 1976-77 year, 70 percent went for service delivery, 11 percent for model development, 11 percent for other expenses, and eight percent for staff training. In the 1977-78 year, service delivery accounted overall for 73 percent of total budgets, 12 percent for other expenses, nine percent for model development, and six percent for staff training.

17. The extent of local funding in Consortium projects increased during the three-year period. In 1975-76 only three of the nine reporting projects received local monies, but in 1977-78 six projects received local monies. Three projects were funded totally or almost totally by local monies for the 1977-78 year. Overall, 45 percent of the total reported 1977-78 budgets were funded locally.

18. The extent of contributed nonbudgeted funds also increased during the three-year period, but these contributed nonbudgeted funds were only a very small percent of total budgets.

19. The concept of a child-month unit was used to compute cost per child per month in each project. A grand total of 9,848 child-month units of service were delivered during 2¾ years, beginning in 1975-76 (through September, 1977).

20. The cost per child-month unit for service delivery varied greatly across individual projects, ranging from $75 to $404. There was generally a reduction in service delivery cost for six of the nine projects across the three years. The higher child-month cost during the 1975-76 year was likely due to fewer students being served during the first year of projects' operations.

21. The overall median cost per child-month unit for service delivery for 2¾ years was $181. The highest median cost for any one year was $254 per child-month (1975-76), and the lowest median cost for any one year was $177 (1976-77).

22. The financial impact of parent involvement was evident when the value of time donated by project parents was calculated. Parents in five of the nine projects contributed 16,919 hours of instruction to children, and the minimum wage value of this service was $44,835. The professional wage value of this service was $131,122.

23. The financial impact of parent involvement was even more dramatic when calculated for individual projects. In

one project parents donated 9,728 hours of instruction which had a minimum wage value of $25,779 and a professional wage value of $75,392. If the project were to have purchased this donated service, the increased cost per child-month unit would have been anywhere from $46 (at minimum wage) to $135 (at professional wage) higher.

24. Another cost benefit of parent involvement was the 3,307 hours of noninstructional service reported by four projects. In terms of minimum wage, this contribution was valued at a total of $8,764.

Effectiveness of Projects

Children's progress.

25. Pre-post objective test scores were reported for a total sample of 126 children from six Consortium projects using four different developmental scales. Scores were available from the Alpern-Boll for 20 children from one project, from the Bayley for 27 children from two projects, from the Koontz for 34 children from one project, and from the Bangs and Dodson-Garrett for 45 children from two projects.

26. Repeated-measures ANOVA showed that all sampled children made highly significant pre-post improvement (less than .001) in all subtest areas. The extent of observed improvement was shown to be substantially greater than that expected from a statistical regression effect or greater than that expected from a growth and maturation effect.

27. Child case study reports were available from a sample of

17 children described as having made the least progress and from a sample of 17 children described as having made the most progress. In the most progress sample, all but four children showed progress in all five developmental areas. In the least progress sample, 13 children showed progress in one or more developmental areas.

28. In the most progress sample, most children had developed limited vocabularies and several began using sentences. Cognitive improvements included following directions, playing games, and exploring. Improvements in the motor area involved walking, throwing, building block towers, etc., and self-care improvements primarily included self-feeding, toileting, and dressing. Improved socialization skills were sharing, smiling, gesturing, playing interactive games, and interactive conversation.

29. In the least progress sample, eight children developed more purposeful communication, ranging from gesturing to word acquisition. Six of the seventeen children increased their awareness level, and motor improvement in seven children included such skills as head control, rolling over, and sitting upright. Five children reportedly learned some degree of self-feeding skill.

30. Data collected in terms of pre-post test scores and child case study reports strongly supported the conclusion that children in Consortium projects had made substantial developmental progress. For the most part, the data strongly suggested that project intervention was effective in promoting the observed developmental progress.

Family impact.

31. Family case study reports showed evidence of many positive changes during project intervention (note each project was asked to complete reports for the two families with the most positive impact). Projects reportedly assisted families during the stages of adjusting to the child and the handicap, and parents improved their adjustment to the handicapped child.

32. The parenting skills of parents improved, and parents developed greater self-confidence and became more involved in rearing the handicapped child. In several cases, siblings of the handicapped child benefited from project involvement.

33. Parents became more active socially and participated in project activities. The sharing among parents apparently resulted in increased emotional support, and several families provided leadership and services to other families.

34. The design of the study did not permit definitive conclusions about the effectiveness of project intervention in improving family life, but it is highly doubtful that the observed sharing and interaction among parents and the increase in parenting skills would have taken place without Consortium projects. The additional support provided by projects during the stages of adjustment was also presumably beneficial.

Parent reaction.

35. Results of the parent survey revealed a strong positive reaction to Consortium projects. All parents said they

would recommend their project to others with a handicapped child, and all parents said that their project was a good investment for taxpayers and that they would encourage others to vote for supporting legislation.

36. All parents reported that project intervention had helped their child's development, and all but three parents said their project had been helpful to the family. These findings supported the foregoing conclusions about the positive effect of project intervention.

37. The amount of contributed time and service given by parents (reported in the Cost Report section) was an additional indication of positive parent reaction to Consortium projects.

Test References

Alpern, G. and Boll, T. Alpern-Boll Developmental Profile. Indianapolis: Psychological Development Publications, 1972.

Bangs, T.E. and Dodson-Garrett, S. Birth-3 Developmental Scale. Speech and Hearing Institute, University of Texas Health Science Center, Houston, 1975.

Bayley, N. Manual for the Bayley Scales of Infant Development. New York: The Psychological Corporation, 1969.

Koontz, C. W. Koontz Child Developmental Program. Los Angeles: Western Psychological Services, 1974.

Appendix

Pages 117 through 136 of the Appendix contain data collection documents and instructions sent to Consortium projects.

Pages 137 through 140 contain ANOVA summary tables.

INSTRUCTIONS

Your materials packet contains the following documents:

1. PROJECT DESCRIPTION FORM - one copy

   Collects basic data about each project.

2. COST REPORT - one copy

   Collects cost data for each project.

3. CUMULATIVE RECORD OF CHILDREN SERVED - multiple copies

   Collects basic descriptive data about all children served during project existence.

4. CHILD CASE STUDY - four copies

   Collects case study progress information for a sample of four children from each project.

5. RECORD OF OBJECTIVE TEST SCORES - multiple copies

   Collects objective test scores measuring children's progress in each project.

6. PARENT INVOLVEMENT SHEET - one copy

   Collects information about extent of parent involvement in each project.

7. PARENT REACTION QUESTIONNAIRE - four copies

   Collects parent reaction data for a sample of four parents from each project.

8. FAMILY CASE STUDY - two copies

   Collects case study project impact information for a sample of two families from each project.

Each of the above eight documents has been designed to collect a specific kind of information. Detailed directions for completing these documents are attached to the front of each document.

Since some projects serve only children aged zero thru two years, and others also serve children three years and older, it is sometimes necessary to distinguish between the zero thru two children and those three years and older. However, the detailed directions for each document will explain this situation when necessary.

It is important that the data reported in the documents are as accurate as possible, since these data will be used for future planning and decision-making. However, it is also important to keep a reasonable balance between data accuracy and personal hardship in completing these documents. This data collection effort will be time-consuming, but it should not be a "back-breaking" task. If undue hardship is foreseen, please call Linda Fikes.

These data collection documents were designed to be as general as possible and to fit the range of projects in the Consortium. However, questions or special situations will undoubtedly arise when completing the documents. If there are special considerations that need to be explained, please add whatever notes are necessary when completing these documents. If specific questions need to be answered, please call Dan Macy, day or evenings at 214 - 827-5158.

Please return the completed documents on or before November 23, 1977 to:

Daniel J. Macy
7028 Irongate Lane
Dallas, Texas 75214

If this collection time line (November 23) is followed, it may be possible to have outcomes reported at the March meeting of the Consortium. Unfortunately, delay by any one project delays the whole process, since analysis cannot really get under way until all projects have returned their documents.

Please study each document and the attached instructions carefully before beginning the data collection task for your project. Be sure to write the name of your project in the upper left corner of each document.

Also, please note that none of the documents ask for personally identifying information for either parents or children. So please do not include names of parents or children.

Project name _____

Location (city) _____

Person preparing report _____ Phone _____

PROJECT DESCRIPTION FORM

The purpose of this form is to gather data which would describe the consortium projects and services provided. Please answer each item on this form. If any item is not applicable to your project, please explain.

1. What was the initial starting date of your project?
   _____ month _____ year

2. What was the initial date you began direct services to children?
   _____ month _____ year

3. Please circle the basic service delivery model of your project.
   home center both home-center other (specify) _____

4. In terms of the geographical area served by your project, give the approximate total number of square miles of your project's service area.
   _____ square miles

5. What is the approximate total population size of your project's service area?
   _____ population

6. What is the age of the youngest child that can be served in your project? (in months)
   _____ months

7. What is the age of the oldest child that can be served in your project? (in months)
   _____ months

8. What is the average age of children currently served in your project? (Even though your project may serve children who are older than two years, please report only the average age of zero thru two year old children)
   _____ months

9. Please give a short description of your project's physical facilities. (use reverse side, if needed)

10. Please report the numbers of persons who were serving in various positions in your project on June 30, 1977. (If your project does not operate with full staff during the summer months, use May 30, 1977.) Since some personnel might serve your project without being funded in your budget, the list is divided into full and part-time personnel specifically funded in your budget, and full-time and part-time personnel whose services are available or contributed to your project but are not specifically budgeted to your project. Each person should be counted only once. Total staff size should be the grand sum of these numbers. Do not report any staff who work exclusively with children age three years or older.

	Budgeted Personnel		Non-Budgeted Personnel	
	Full-time	Part-time	Full-time Contributed	Part-time Contributed
A. Teachers				
B. Aides or paraprofessionals				
C. Managerial personnel				
D. Secretarial or clerical				
E. Support professionals (counselors, psychologists, physical therapists, etc.)				
F. Others, specify _____				
Sub Total				

Grand Total (should equal total staff size) _____

11. On the attached page, please report the requested information for the instructional staff (as of June 30, 1977; or May 30, 1977, if more appropriate) you reported on lines A and B (teachers and paraprofessionals) under item 10.

Project _____

PROJECT DESCRIPTION (CONTINUED)

11. Please complete for your instructional staff (only those providing direct instruction to children). If more space is needed, use the reverse side of this form. Do not report any staff who work exclusively with children age three years or older.

Person	Position (circle one) T-Teacher	A-Aide	O-Other	Highest Educational Level (circle one) H.S.-High School	B-Bachelor	M-Master	Ph.D.-Ph.D.	Major Area of Study	Total Years Teaching Experience	Total Years Teaching In Special Education
1	T	A	O	H.S.	B	M	Ph.D.			
2	T	A	O	H.S.	B	M	Ph.D.			
3	T	A	O	H.S.	B	M	ph.D.			
4	T	A	O	H.S.	B	M	Ph.D.			
5	T	A	O	H.S.	B	M	Ph.D.			
6	T	A	O	H.S.	B	M	Ph.D.			
7	T	A	O	H.S.	B	M	Ph.D.			
8	T	A	O	H.S.	B	M	Ph.D.			
9	T	A	O	H.S.	B	M	Ph.D.			
10	T	A	O	H.S.	B	M	Ph.D.			
11	T	A	O	H.S.	B	M	Ph.D.			
12	T	A	O	H.S.	B	M	Ph.D.			
13	T	A	O	H.S.	B	M	Ph.D.			
14	T	A	O	H.S.	B	M	Ph.D.			
15	T	A	O	H.S.	B	M	Ph.D.			
16	T	A	O	H.S.	B	M	Ph.D.			
17	T	A	O	H.S.	B	M	Ph.D.			
18	T	A	O	H.S.	B	M	Ph.D.			

COST REPORT

Directions:

The purpose of this form is to provide cost descriptions that will be generalizable across different projects. Please complete this report by giving the requested cost amounts and percentages. The terminology used on the report is defined to guide you in classifying costs.

I. BUDGETED COSTS

TOTAL BUDGET COST:

This is the total dollar amount budgeted by your project for each fiscal year. There should be a total budget cost for each year that your project has operated. Place these totals under the appropriate years of operation. There should be no overlap from year to year. The total budget cost is divided into two types: local and nonlocal. These two figures should sum to the total budget cost for each year.

LOCAL: This would include all budgeted funding from the local, in-house level. This could include funding by the hosting institution, direct financial support received from service clubs, etc.

NONLOCAL: This would include all funding from the state and/or federal level.

TOTAL BUDGET COST BY PERCENTAGES:

This would be the approximate percentages of the total budget cost (regardless of local or nonlocal source) spent in each of four general areas: service delivery, staff training, model development, and other. For each year of operation, these four percentages should sum to a total of 100%. As an example for a given year, 55% might have been devoted to service delivery, 20% to staff training, 15% to model development, and 10% to other.

*SERVICE DELIVERY: These percentages should include costs incurred for direct service to children and parents, such as teachers' salaries, materials, etc.

STAFF TRAINING: These percentages should include costs for all staff development in the project.

MODEL DEVELOPMENT: These percentages should include costs incurred in developing screening procedures, etc.

OTHER: These percentages should include all other budgeted costs incurred in the project, such as operating expenses, etc.

*Service delivery should be the portion of costs that would be incurred if your project delivery model were replicated and your project per se were discontinued. The portions of costs in staff training, model development, and other should be unique to project operation and would not be incurred at a replication site (assume the replication site has an appropriately trained staff).

II. CONTRIBUTED NONBUDGETED COSTS:

An approximate total should be given for each fiscal year. These totals would include costs of services, facilities, or resources contributed to the project and for which there is no explicit budget item or items. Hence, these costs cannot be reported above in the TOTAL BUDGET COST. Contributed nonbudgeted costs might include such things as building rental or incidental appraisal services contributed by either the project's hosting institution or an outside source. These totals should represent costs incurred by the project but not accounted in the project budget and contributed by sources outside the project. In some cases, contributed nonbudgeted costs might include even teacher salaries.

Note that the cost report makes no distinction between zero thru two children and older children. Please complete the cost report for your total project, regardless of age of children served.

Project _____

COST REPORT

I. BUDGETED COSTS

		FISCAL YEAR 1975-76	1976-77	1977-78
TOTAL BUDGET COST	Total Budget	$ _____	$ _____	$ _____
	Nonlocal	$ _____	$ _____	$ _____
	Local	$ _____	$ _____	$ _____
TOTAL BUDGET COST (Percentages)	Service delivery*	____%	____%	____%
	Staff training	____%	____%	____%
	Model development	____%	____%	____%
	Other (include management, project operating routines, etc.)	____%	____%	____%
	Total	100 %	100 %	100 %

*Note: Service Delivery should be the portion of costs that would be incurred if your project delivery model were replicated and your project per se were discontinued. The portions of costs in staff training, model development, and other should be unique to project operation and would not be incurred at a replication site (assume the replication site has appropriately trained staffed).

II.

		1975-76	1976-77	1977-78
CONTRIBUTED NONBUDGETED COSTS	Approximate cost	$ _____	$ _____	$ _____

135

CUMULATIVE RECORD OF CHILDREN SERVED

Directions:

The purpose of this form is to gather information on each individual child who has received direct educational/developmental services which included home and/or center/based programming. This does not include monitoring of high-risk children. This would include all students served between the initial starting date of your project and September 30, 1977. Do not include students who received only screening and/or assessment services and were not admitted to the project. Also, do not include students who entered the project after September 30, 1977.

Since some projects serve only children aged zero thru two years, and others serve older children, it will be necessary to report children separately according to age group. Form A is for children aged zero thru two years, and Form B is for children aged three years and older. Age is taken at the time of project entry. Forms A and B are identical forms, otherwise. For each child on Forms A and B, circle the appropriate sex and ethnicity; identify the primary handicap and other handicaps, if any; give the dates of entry to and exit (if any) from the project; and place a check mark in the last column if the child is still active in your project. If the child is still active, there would be no exit date. If your project serves only zero thru two-year olds, you would complete only Form A for as many children as you have served.

Under handicapping condition on Form A and B, place a "P" in the handicap column which best describes the primary handicap of the child. For any other handicaps, an "O" should be placed in the column(s) which best describe(s) any other handicap(s). If there is only one handicapping condition for a child, a "P" in the appropriate column is sufficient. For each child, there should be only one "P" identifying the primary handicap, but the number of "O's" could range from zero to several depending on the number of other handicaps of each child.

PROJECT _____

FORM A

Student	SEX (circle one) M- Male F- Female	ETHNICITY (circle one) A- Anglo B- Black M-A- Mex.Am. O- Other	Handicapping Condition: P-Primary: Mentally Retarded	Orthopedic	Language	Developmentally Delayed	Hearing	O-Others: Vision	Other	Emotionally Disturbed	FORM A - ZERO THRU TWO YRS. ENTRY DATE MO.	YR.	EXIT DATE (If any) MO.	YR.	Check If Still Active in Project
1	M F	A B M-A O													
2	M F	A B M-A O													
3	M F	A B M-A O													
4	M F	A B M-A O													
5	M F	A B M-A O													
6	M F	A B M-A O													
7	M F	A B M-A O													
8	M F	A B M-A O													
9	M F	A B M-A O													
10	M F	A B M-A O													
11	M F	A B M-A O													
12	M F	A B M-A O													
13	M F	A B M-A O													
14	M F	A B M-A O													
15	M F	A B M-A O													
16	M F	A B M-A O													
17	M F	A B M-A O													
18	M F	A B M-A O													
19	M F	A B M-A O													

FORM A - ZERO THRU TWO YRS.

CUMULATIVE RECORD OF CHILDREN SERVED

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PROJECT _____

FORM B

Student	SEX (circle one) M= Male F= Female	ETHNICITY (circle one) A= Anglo B= Black M-A= Mex.Am. O= Other	Handicapping Condition P-Primary O-Others: Mentally Retarded	Orthopedic	Language	Developmentally Delayed	Hearing	Vision	Other	Emotionally Disturbed	FORM B - THREE YEARS AND OLDER ENTRY DATE MO. YR.	EXIT DATE (if any) MO. YR.	Check If Still Active in Project
1	M F	A B M-A O											
2	M F	A B M-A O											
3	M F	A B M-A O											
4	M F	A B M-A O											
5	M F	A B M-A O											
6	M F	A B M-A O											
7	M F	A B M-A O											
8	M F	A B M-A O											
9	M F	A B M-A O											
10	M F	A B M-A O											
11	M F	A B M-A O											
12	M F	A B M-A O											
13	M F	A B M-A O											
14	M F	A B M-A O											
15	M F	A B M-A O											
16	M F	A B M-A O											
17	M F	A B M-A O											
18	M F	A B M-A O											
19	M F	A B M-A O											

CHILD CASE STUDY

Directions:

Select four children served in your project and who were aged zero thru two years at time of entry into your project. These four children will make up the four children's case studies reported by your project.

Two of the four children should be those who have made the least progress, and two should be those who have made the most progress. However, the four children must be selected from those who have been in the project for at least 12 months and not more than 15 months. Even if your project does not provide continuing service through the summer months, the summer months may be included in the 12-15 interval if desired. However, please note somewhere in the CHILD CASE STUDY form if the 12-15 month interval includes summer months with no project service for a particular child.

Attached are four Child Case Study report sheets. Complete one for each of the four children you have selected. Your descriptions of each child's entry and exit skills should be based on your observations and experience with these children. Please build your descriptions around the five areas listed on the report sheet (communication, cognition, mobility/motor, self-care, and socialization).

Note that a child who is still in the project may be selected. In that case, "exit" would refer to the current time of observation.

PROJECT _____

Progress Made
LEAST MOST
(circle one)

CHILD CASE STUDY

_____ Date of Birth

M F Sex

Anglo Black Hispanic Other Race

(please circle)

Handicap Category

Primary _____

Other(s) _____

Entry (pre observation)	Exit (post observation)
1. Communication - verbal and nonverbal	1. Communication - verbal and nonverbal
2. Cognition	2. Cognition
3. Self-care (feeding, dressing, toileting)	3. Self-care (feeding, dressing, toileting)
4. Mobility/Motor	4. Mobility/Motor
5. Socialization (include Parent-child interaction)	5. Socialization (include Parent-child interaction)

Briefly describe the services received by this child during the time between entry-exit (include the kind and amount of instruction, support assistance, etc.).

What explantion do you have for this child making so (much/little) progress during the entry-exit interval?

RECORD OF OBJECTIVE TEST SCORES

Directions:

The purpose of this document is to report children's developmental progress through pre-post measures with an objective or standardized test. The objective test used may be a very formal and well standardized instrument such as the Bayley Scales of Infant Development or the Cattell Infant Intelligence Scale, or it may be a developmental scale such as the Bangs and Dodson-Garrett Birth-3 Developmental Scale, or it may even be a developmental checklist developed in-house by your project staff. The only criteria are that the test is objectively scored and yields one or more raw scores expressed by some numeric value.

It is known that a variety of tests and instruments are being used by the Consortium projects. Consequently, this form is designed in a general format in order to gather information from many different tests. For this reason the terminology on the attached RECORD document may not correspond to the exact score labels used on the test or subtests that you are reporting.

The RECORD document makes use of six score labels: Mental/cognitive language/communication, motor, self-care. socialization, and total composite. It is thought that the first five score labels will cover most score areas that you will be reporting. A total composite score label is provided in the event that your test yields a total composite score. If one or more of these score labels do not fit your test, please cross out and re-label the appropriate score columns on the attached RECORD document. Leave blank any columns for scores that your test does not yield.

Be sure to report both a pre and post score for each score area reported for a given child. For example if there is a motor pretest score for a child, there should be a motor posttest score for that child. However, it is not essential that all children have been measured on all subtests.

The conditions for reporting objective test score data for each project are:

1) the same objective test must have been administered on a pre-post basis to at least 20 children. (Age zero thru two years at time of project entry)

2) the time between pretest and posttest must be no less than 12 months and no more than 15 months. (The 12-15 months may include the summer months regardless of whether or not service was continued during the summer. However, please indicate on the RECORD document those children, if any, who did not receive service during the summer.)

If your project cannot meet these two conditions, please answer the following question and return this form, without reporting objective test scores for any students. We cannot supply the requested information because: (place a check mark next to the reason or reasons)

_____ A. We did not have 20 or more children measured with the same instrument.

_____ B. We did not have 20 or more children measured within the 12-15 interval.

_____ C. We did not collect objective pre-post test data on our children.

If your project has collected pre-post (12-15 months) data on 20 or more students with more than one objective test, select the most standardized and best known test for reporting pre-post scores. For example, scores from the Bayley or Cattell would be preferred to scores from the Bangs and Dodson-Garrett Birth-3 Developmental Scale. If you have pre-post data on two well known tests (such as both the Bayley and Cattell), report scores from the test for which you have the larger sample of children, but please indicate on the RECORD document that you also have scores from the other test. So then, please do not report pre-post scores from more than one test.

You may have collected pre-post data on many more than 20 students. If you have pre-post data on 20 to 40 students; report the scores for all students. If you have pre-post data on more than 40 students, then report only the 40 students who were tested most recently.

Please report only <u>raw scores</u>. Do <u>not</u> give any normative scores such as age equivalent or percentile.

If the test scores you report are from other than the Bayley or Cattell, please send an example score sheet or profile sheet. This will assist in understanding and interpreting your reported test scores.

PROJECT _____

RECORD OF OBJECTIVE TEST SCORES

(Zero thru two years)

Name of Test _____ Author(s) _____ Publisher _____

This test is primarily designed to measure _____

Are test score norms available for this test? yes no

		Pre Scores							Post Scores						
Student	Date of Birth Mo Da Yr	Pre-test Date Mo Da Yr	Mental/ Cogni-tive	Lang./ Comm.	Motor	Self-Care	Social-ization	Total Composite	Post-test Date Mo Da Yr	Mental/ Cogni-tive	Lang./ Comm.	Motor	Self-Care	Social-ization	Total Composite
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															

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PARENT INVOLVEMENT SHEET

Directions:

The purpose of this form is to gather information about the extent of parent involvement in your project. Part I of the form addresses activities offered by your project for parents, and Part II concerns services provided to your project by parents.

The activities offered (Part I) and services provided (Part II) should be from the beginning of your project thru September 30, 1977. However, only report those activities (Part I) which included one or more parents of children aged zero thru two years (at time of project entry) and only those services (Part II) provided by parents of children aged zero thru two years (at time of project entry).

It is likely that some projects may have not kept accurate records of all this information, and if so, report the most accurate estimate of the requested information. Please indicate on the document, if you are reporting information from records kept by the project.

PARENT INVOLVEMENT SHEET

(zero thru two years)

Check box if information was kept in project records

Part I Activities Offered for Parents

1. Give a brief description of the kinds of project activities conducted for parents.

☐ _____ 2. How many parents have attended or participated in one or more activities offered for the parents?

☐ _____ 3. What is the total number of hours of project activities conducted for parents?

Part II Service Provided by Parents

☐ _____ 4. How many parents have provided some type of service to your project?

☐ _____ 5. What is the total number of contact hours of service provided by parents in the formal or guided instruction of their own children?

☐ _____ 6. What is the total number of contact hours of service provided by parents in the formal or guided instruction of other children (not their own)?

☐ _____ 7. What is the total number of hours of service provided by parents in all areas other than instruction to children?

8. Give a brief description of the kinds of services provided in question seven.

PARENT REACTION QUESTIONNAIRE

Directions

Randomly select four parents from the population of parents whose children have been served in your project for at least six months. Note that the child must have been age zero thru two years at time of entry into the project. If your project also serves children age three years and older, only part of your parent population is eligible to be sampled, and it will be necessary first to identify the zero thru two parent population before drawing your random sample of four parents.

Parent may include mother or father, guardian, or primary caretaker, and the children may be currently served or may have been served any time in the past. Hence, the parent population includes all parents whose child (aged zero thru two years at project entry) was ever served for at least six months in your project. The four attached questionnaires are to be completed, one for each of the four sampled parents. Note that this questionnaire contains only 6-8 short-answer items.

Since many projects routinely collect reaction data from their parents, it is possible that you may have one or some of the questionnaire items already answered for one or more of your four sampled parents. If so, feel free to use these data in completing all or part of the questionnaire for these parents. Caution: Resist the temptation to randomly sample from just those parents for whom you already have some reaction data or from those parents whose reaction is known to be quite positive. The reason is that the sample of four parents provided by each project needs to make up a random sample of the total Consortium parent population. So please, draw your sample of four parents randomly from your own total parent population (child served at least six months, age zero thru two at project entry).

If you should randomly select a parent(s) who is difficult or impossible to contact, randomly select another parent(s) to replace the one initially selected. A telephone interview is the suggested means of collecting the needed parent responses, but personal contact is certainly acceptable.

Project _____

PARENT REACTION QUESTIONNAIRE

Relationship of 'parent' to child (please circle):

mother father grandmother grandfather guardian primary caretaker

Means of collecting responses (please circle):

telephone interview | personal interview | reaction data already in project records* | other (explain) _____

(*Please place a check mark (✓) beside those items answered by existing parent reaction data.)

(circle one)

definitely yes / probably yes / possibly / no — 1. Do you think our project, (insert identifying information, if desired), has helped your child's development?

If definitely yes or probably yes, in what ways? _____

definitely yes / probably yes / possibly / no — 2. Do you think our project (_____) has been helpful to your family?

If definitely yes or probably yes, in what ways? _____

definitely yes / probably yes / possibly / no — 3. Would you recommend our project (_____) for others with handicapped children?

definitely yes / probably yes / possibly / no — 4. Do you think projects such as this one are a good investment for the taxpayer?

definitely yes / probably yes / possibly / no — 5. Would you encourage others to vote for state legislation that would support projects such as this one?

_____ 6. What did you like best about this project?

FAMILY CASE STUDY

Directions:

The purpose of this form is to gather information about the impact of your project on the total family. Select two familes for which your project has had the most positive impact.

Remember to select the two families from only those families whose child was aged zero thru two years at time of project entry. Do not select a family whose child has been in your project for less than six months.

Use the two attached forms for providing a short case study on these two families. The four questions on the form are designed only to guide your answers, which should be based on your observations and experiences with the two families selected.

Project _____

FAMILY CASE STUDY

(circle one)

a. two-parent home
b. single-parent home
c. other _____

1. What is the marital status of this family?

_____ 2. What is the estimated age of the parents?

_____ 3. How many children in this family?

_____ 4. What is the current age of the handicapped child (in months)?

_____ 5. How many months has the handicapped child been in your project?

1. Describe any <u>changes</u> in family stability (emotional/economic).

2. Describe any <u>changes</u> in family acceptance of or interaction with the handicapped child.

3. Describe any other <u>changes</u> which showed project impact on the family.

4. Describe extent of parent involvement with the project (give examples).

Alpern-Boll

ANOVA Summary Tables

Subtest	Source	Degrees of Freedom	Sums of Squares	Mean Square	F
Academic	C*	19	1,834.48		
	P*	1	616.23	616.23	27.66
	E*	19	423.27	22.28	
	T*	39	2,874.98		
Communication	C	19	6,817.10		
	P	1	1,188.10	1,188.10	24.17
	E	19	933.90	49.20	
	T	39	8,939.10		
Physical	C	19	3,069.10		
	P	1	624.10	624.10	32.40
	E	19	365.90	19.30	
	T	39	4,059.10		
Self-help	C	19	3,700.40		
	P	1	1,123.60	1,123.60	35.79
	E	19	596.40	31.39	
	T	39	5,420.40		
Social	C	19	4,190.00		
	P	1	1,488.40	1,488.40	31.86
	E	19	887.60	46.72	
	T	39	6,566.00		

*(C) Children
(P) Pre-post
(E) Error
(T) Total

Bayley

ANOVA Summary Tables

Subtest	Source	Degrees of Freedom	Sums of Squares	Mean Square	F
Mental	C*	26	51,064.33		
	P*	1	19,003.13	19,003.13	59.86
	E*	26	8,253.37	317.44	
	T*	53	78,320.83		
Motor	C	26	11,583.59		
	P	1	3,901.50	3,901.50	53.81
	E	26	1,885.00	72.50	
	T	53	17,370.09		

*(C) Children
(P) Pre-post
(E) Error
(T) Total

Koontz

ANOVA Summary Tables

Subtest	Source	Degrees of Freedom	Sums of Squares	Mean Squares	F
Receptive language	C*	33	7,145.88		
	P*	1	2,719.12	2,719.12	132.19
	E*	33	678.88	20.57	
	T*	67	10,543.88		
Expressive language	C	33	4,117.01		
	P	1	2,808.36	2,808.36	81.07
	E	33	1,143.14	34.64	
	T	67	8,068.51		
Gross motor	C	33	6,081.49		
	P	1	2,134.73	2,134.73	139.52
	E	33	504.77	15.30	
	T	67	8,720.99		
Fine motor	C	33	7,830.01		
	P	1	3,545.30	3,545.30	238.26
	E	33	491.20	14.88	
	T	67	11,866.51		
Social	C	33	7,887.47		
	P	1	3,111.76	3,111.76	240.29
	E	33	427.24	12.95	
	T	67	11,426.47		

*(C) Children
(P) Pre-post
(E) Error
(T) Total

Bangs and Dodson-Garrett

ANOVA Summary Tables

Subtest	Source	Degrees of Freedom	Sums of Squares	Mean Square	F
Language expression	C*	43	5,412.22		
	P*	1	3,325.92	3,325.92	195.18
	E*	43	732.58	17.04	
	T*	87	9,470.72		
Language comprehension	C	44	5,207.56		
	P	1	2,364.02	2,364.02	72.01
	E	44	1,444.48	32.83	
	T	89	9,016.06		
Motor	C	44	5,440.40		
	P	1	2,560.00	2,560.00	151.84
	E	44	742.00	16.86	
	T	89	8,742.40		
Problem solving	C	43	5,016.58		
	P	1	3,084.56	3,084.56	197.98
	E	43	669.94	15.58	
	T	87	8,771.08		
Social-personal	C	44	5,242.16		
	P	1	3,828.55	3,828.55	266.98
	E	44	630.95	14.34	
	T	89	9,701.66		

*(C) Children
(P) Pre-post
(E) Error
(T) Total